

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
DAM SAFETY PROGRAM  
Honolulu, Hawaii**

April 9, 2021

**Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii**

**Regarding:** Dam Safety Enforcement Action on Ukumehame Reservoirs (MA-0140) for Failure to Comply with Notice of Deficiency, February 18, 2020

**Dam Owner:** West Maui Investors, LLC (Faraz Daneshgar)  
c/o 3D Investments, LLC  
468 N. Camden Drive, #100  
Beverly Hills, CA 90210

**Location:** Waikapu, Maui County

**Tax Map Key:** (2) 4-8-002:066, (2) 4-8-002:015, (2) 4-8-002:017, (2) 4-8-002:027,  
(2) 4-8-002:064, (2) 4-8-002:118

**Background of Dam**

Ukumehame Reservoirs are comprised of two interconnected rock lined reservoirs, Ukumehame No. 2 and Ukumehame No. 3, located at the downstream end of the Ukumehame Gulch watershed on the south side of the Island of Maui (see Figure 1). These reservoirs are regulated as one structure as they are operated as a twin reservoir facility. The original date of construction is unknown, however is believed to have been constructed in support of the sugar industry in the early 1900s. Ukumehame Reservoir No 1 is a small unregulated pond further up in the gulch from Reservoir No. 2. Residential dwellings are situated downstream of Reservoir No. 2 & 3, which prompts classifying these structures as a high hazard potential dam (as the dam's failure could result in a probable loss of human life).

The Ukumehame reservoirs 1, 2 and 3 have historically been utilized for storage of a small portion of the flow diverted from Ukumehame Gulch and distributed to farms and other uses including water supply to residential areas. Attachment A describes the diversions into the reservoirs.

Ukumehame Reservoir Nos. 2 and 3 physical data:

|                   |   |
|-------------------|---|
| Construction:     | Earthen embankment dams with rock lined reservoir |
| Dam No. 2 Height: | 21 ft high  |
| Volume:           | 18 acre-ft (6 million gallons)                    |

Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

|           |         |                                  |
|-----------|---------|----------------------------------|
| Dam No. 3 | Height: | 29 ft high                       |
|           | Volume: | 26 acre-ft (8.9 million gallons) |

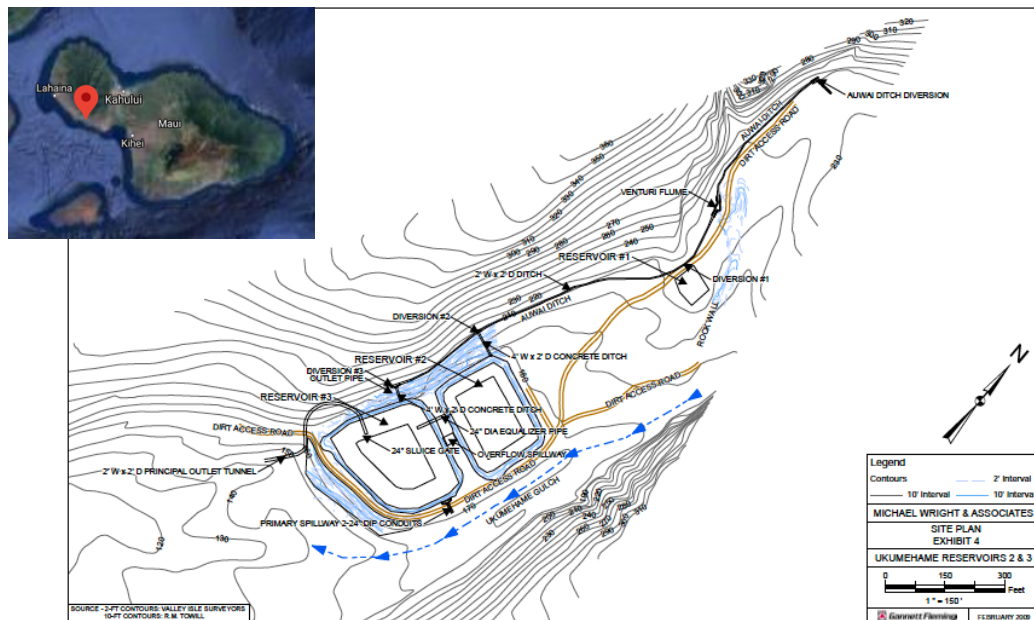


Figure 1. Map and aerial view of the Ukumehame Reservoirs.

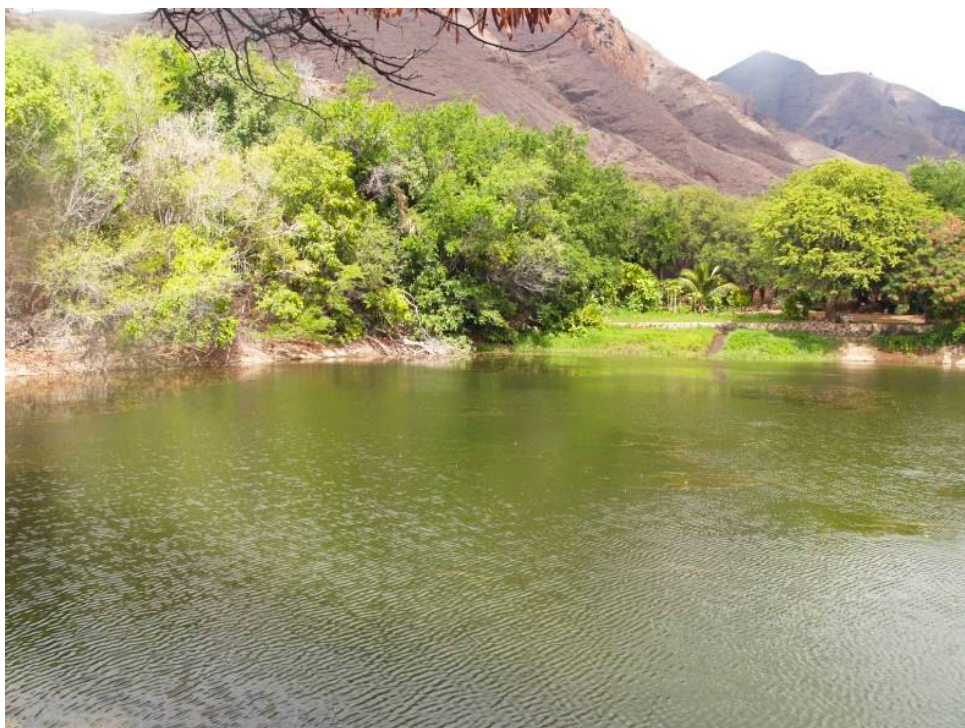


Figure 2. Ukumehame Reservoir No. 2.



Figure 3. Ukumehame Reservoir No. 3.

Since 2008, four visual site inspections and a condition assessment have been conducted on the Ukumehame Reservoirs:

- DLNR visual inspections in 2008, 2011, 2013, and 2015.
- Gannett Fleming (Owner Consultant) - Condition Assessment in 2009.

### **Primary Safety Issues**

Two primary safety issues exist at the dam facility:

1. A large flowing seep (estimated 30-50 gallons per minute), on the downstream slope of the dam from Reservoir 3 (figure 4). If allowed to persist, the seep could develop into a more serious problem and eventually cause a piping failure of the dam.
2. The spillways for both Reservoir Nos. 2 and 3 are undersized to handle a Probable Maximum Flood (PMF) of 15,161 cfs from Ukumehame Gulch. The Reservoirs would be overtopped during a PMF storm event.





Figure 4. Seepage at the downstream face of Reservoir 3.

#### **Enforcement Actions & Owner's Response**

June 20, 2008, DNLR sent a letter directing the owner to immediately reduce the water level in Reservoir No.3 until the seep on the downstream slope stopped. The owner lowered the water level in the reservoir, and in a letter (April 13, 2009) notified the DLNR that Gannett Fleming had been retained to study the seepage and provide recommendations. In the April 2009 Condition Assessment Report performed by Gannett Fleming, it was determined that Ukumehame Reservoirs would be overtopped by 0.1 feet during a 100 Year Storm event and "overwhelmed" by a PMF event.

DLNR had been working with the owner and their consultant on the approval of a dam safety permit to remove the structure. A dam safety permit was approved by the DLNR Land Board and issued on November 14, 2017. (See the approved Dam Safety Permit No. 77 in Attachment A.) Subsequent to the issuing the permit, DLNR dam safety staff was not aware of any further action to initiate the construction of the removal work.

On February 18, 2020, the DLNR issued a Notice of Deficiency (NOD) (see Attachment B) to the Owner indicating the dam was in POOR overall condition and a threat to public safety due to one or more physical / operational conditions and deficiencies. As a HIGH Hazard Potential structure, the facility is required to pass the Full PMF with adequate freeboard as defined in HAR §13-190.1. The NOD required the Owner to comply with the remediation schedule summarized in Table 1, below.

To date, DLNR has not received a response to the 2020 NOD. However, in a meeting with DLNR staff on December 21, 2020, the Owner indicated their intent to send a letter



Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

to the DLNR on the Owner's plans and situation and to officially respond to the 2020 NOD. The Owner also expressed a willingness to install a water level monitoring system and to begin submitting monthly monitoring reports. The Owner requested contact information from the USGS, who installs and maintains such systems. (See the meeting notes in Attachment C.) DLNR has not received any new information from the Owner since the December 21, 2020 meeting.

A summary and status of the NOD action items is provided in Table 1.

| No. | Deadline  | Item  | Current Status  |
|-----|-----------|---|---|
| 1   | 4/01/2020 | Contract with a Consultant to complete engineering evaluation of deficiencies.  | Completed. The Owner contracted Gannett Fleming to complete the necessary studies and designs to submit a permit application package in 2016. |
| 2   | 5/30/2020 | Install Water Level Monitoring System.  | The Owner has failed to install a level monitoring system.  |
| 3   | 8/30/2020 | Submit Technical Studies.   | Completed. Design report prepared by Gannett Fleming submitted to DLNR.   |
| 4   | 8/30/2021 | Submit Dam Safety Permit Application.   | Dam Safety Permit No. 77 for removal issued on 11/14/2017.<br><br>Alterations to this permit scope or new design application submittal due.   |
| 5   | 8/30/2022 | Start Construction.   | Construction not started.   |
| 6   | Monthly   | Keep and maintain the reservoir empty under normal conditions.<br><br>Submit monthly monitoring reports including reservoir water level, photos of the water level at the staff gage and other pertinent information to the Department. | The Owner has kept the reservoirs empty but has failed to submit monthly monitoring reports.  |

Table 1. Summary and status of the action items from the February 18, 2020 NOD.

### **Staff Recommendations**

DLNR has informed the Owner of the deficiencies and the regulatory requirements in multiple reports and notices dating back to 2008. However, the Owner has not followed through on permanent resolution of the dam safety issues, they have not installed a water level monitoring system, and has failed to keep the Department informed of any status of the facility as requested. Accordingly, DLNR is recommending enforcement action by issuing fines as discussed below and summarized in Attachment D.

Pursuant to Hawaii Revised Statutes (HRS) §179D and Hawaii Administrative Rules (HAR) §13-190.1, the DLNR staff recommends the Board of Land and Natural Resources find the Owners of the Ukumehame Reservoirs (MA-0140), the West Maui Investors, LLC, in violation of HRS §179D-6(b)(17) for failing to adopt remedial measures as ordered by in the February 18, 2020 Notice of Deficiency Letter and subject to the following enforcement actions/penalties:

1. The West Maui Investors, LLC is fined \$5,000 for failing to install a water level monitoring system on the reservoir by DLNR deadline of 5/30/2020, pursuant to HRS §179D-6(b)(17).
2. The West Maui Investors, LLC is fined \$5,000 for failing to submit monthly monitoring reports including reservoir water level, photos of the water level at the staff gage, and other pertinent information to the DLNR on a monthly basis, pursuant to HRS §179D-6(b)(17).
3. The West Maui Investors, LLC shall pay all fines (total \$10,000) within sixty (60) days of the date of the Board's action.
4. In the event the West Maui Investors, LLC fails to comply with any order herein, the Owner shall be fined an additional \$5,000 per day per order until the order is complied with.

Pursuant to HRS §179D-6(b)(17), the West Maui Investors, LLC shall be required to comply with the following actions by the deadlines shown:

Within ninety (90) calendar days of the date of the Board's action:

Install Water Level Monitoring System: Install a fully functional, real-time reservoir water level gage with the readings accessible on the internet.

Within thirty (30) calendar days of the date of the Board's action:

Submit monthly monitoring reports including reservoir water level, photos of the water level at the staff gage, and other pertinent information to the DLNR by email at [dlnr.en.fcads@hawaii.gov](mailto:dlnr.en.fcads@hawaii.gov).

Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

By August 30, 2021, the West Maui Investors, LLC shall submit an application for a new design or alterations to the previously issued Dam Safety Permit No. 77 to remove the dam; or shall provide DLNR with a project schedule to complete the construction as approved in Dam Safety Permit No. 77. The project schedule shall include deadlines for submittal of proof of construction award and a notice to proceed with construction.

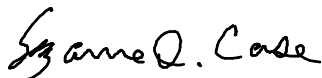
By August 30, 2022, the West Maui Investors, LLC shall start construction on the dam safety improvements (as stated in the 2020 Notice of Deficiency) and shall complete construction by November 14, 2022 (as required in Dam Safety Permit No. 77 general conditions).

Respectfully submitted,



CARTY S. CHANG  
Chief Engineer

APPROVED FOR SUBMITTAL:



SUZANNE D. CASE, Chairperson  
Board of Land and Natural Resources

ATTACHMENTS:

- A Flow Diversions from the Ukumehame Gulch into Ukumehame Reservoirs 1, 2, and 3
- B Approved Dam Safety Permit No. 77, issued November 14, 2017  
Ukumehame Reservoirs (MA-0140) Dam Removal, Maui, Hawaii
- C Notice of Dam Safety Deficiency, issued February 18, 2020
- D Meeting Notes for Meeting on December 21, 2020 Between Ukumehame Reservoirs' Owners and DLNR Staff
- E Ukumehame Summary Sheet and Scorecard



---

**ATTACHMENT A**

---

Flow Diversions from the Ukumehame Gulch into Ukumehame Reservoirs 1, 2, and 3

## Flow Diversion

The following describes how a portion of the Ukumehame Gulch flow is diverted to the Ukumehame Reservoirs, as shown in Figure 5 below.

1. A portion of the Ukumehame Gulch flow is intercepted and captured by a concrete diversion structure 1,000 feet north of Reservoir No. 2. A gate valve controls the flow into a narrow earthen ditch along the west side of the Ukumehame Gulch valley. The ditch passes through a flow measuring Venturi flume 380 feet south of the diversion structure.
2. The first diversion from this ditch is 525 feet south of the diversion structure. It diverts a portion of the flow to Reservoir No. 1 through a 16-inch pipe. A concrete block in the ditch divides the flow into Reservoir No.1 and flow into the downstream irrigation ditch conveying flow to Reservoirs No. 2 and 3.
3. The second diversion from the irrigation ditch sends flow into the northwest corner of Reservoir No. 2. This is accomplished through the use of stop logs in front of a rectangular concrete flume.
4. The third diversion from the irrigation ditch similarly sends flow into the northwest corner of Reservoir No. 3. This is also accomplished through the use of stop logs in front of a rectangular concrete flume.
5. An 8-inch outlet pipe takes remaining flow (that has not been diverted into Reservoir Nos. 1, 2 and 3) south to provide usable water for showers and other uses for the residential property south of Reservoir No. 3.

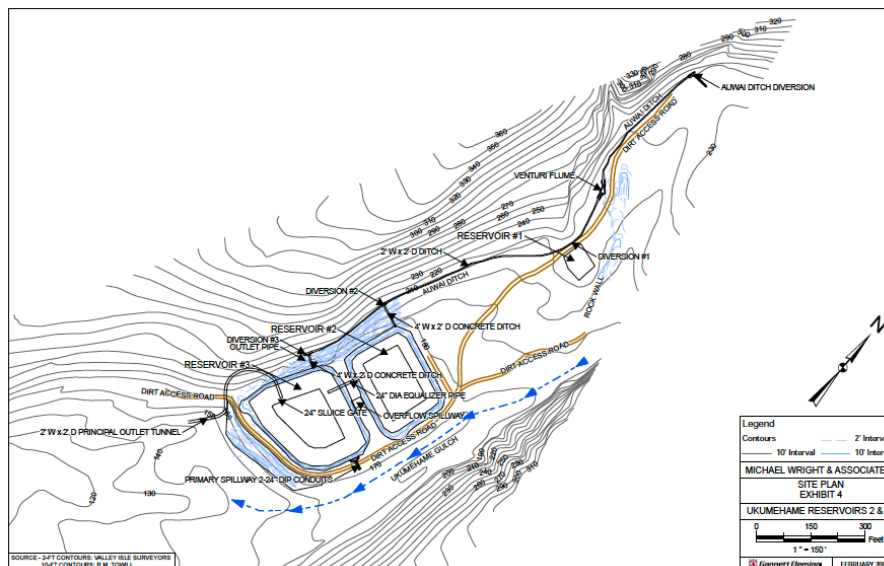


Figure 5. Plot plan. Source: Gannett Fleming Condition Assessment Report, April 2009.

Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

---

**ATTACHMENT B**

---

Approved Dam Safety Permit No. 77, issued November 14, 2017  
Ukumehame Reservoirs (MA-0140) Dam Removal, Maui, Hawaii



DAVID Y. IGE  
GOVERNOR OF  
HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

**NOV 14 2017**

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Mr. Matthew S. Balven  
Gannett Fleming, Inc.  
3838 N. Central Ave., Suite 1900  
Phoenix, Arizona 85012

Dear Mr. Balven:

**UKUMEHAME RESERVOIR (MA-0140)  
DAM SAFETY PERMIT NO. 77  
DAM REMOVAL, MAUI, HAWAII**

Your permit application submitted, on January 19, 2016, for the Ukumehame Reservoir (MA-0140) – Dam Removal, has been examined and approved subject to the attached dam safety permit general conditions and the following special conditions:

1. The dam shall be removed in accordance with the approved plans and specifications as indicated on the following chart:

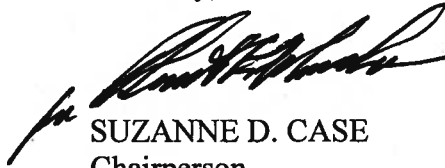
| Plan Sheet(s)   | Plan Date    | Revision Date |
|---|--------------|---------------|
| Ukumehame Reservoirs Nos. 2 &<br>3 Dam Removal and Grading<br>Plan Sheets G-01 to G-04, V-01,<br>D-01, C-01, C-02, EC-01, EC-02 | October 2017 | N/A           |

2. Gannett Fleming Inc., or the owner's representative will ensure photos are submitted to the State Historic Preservation Division (SHPD) documenting the installation of the temporary protective measures (fencing) along the archaeological preservation buffers; identified as Buffer Areas 5 and 6 (as recorded in final plan, Subdivision file No. 4.876) prior to initiating other construction activities (Reference: SHPD log No. 2016.01884 and Doc No. 1710SL01).
3. The Department of Land and Natural Resources (Department) reserves the right to suspend or revoke this permit approval upon, either a finding of violation of any of the stipulated conditions or a determination of a threat to public health and safety from factors which may arise in the future.

4. The owner shall operate and maintain the dam and reservoir in accordance with Hawaii Revised Statutes, Chapter 179D, until the dam removal work is complete and receives final release from the Department.
5. The issuance of this permit does not create any liability on the part of the Department, its officers or any employee thereof for any damage that results from reliance on this permit.

If you have any questions, please call Mr. Carty Chang, Chief Engineer of the Engineering Division, at (808)587-0230.

Sincerely,

A handwritten signature in black ink, appearing to read "Suzanne D. Case", is written over the printed name and title.

SUZANNE D. CASE  
Chairperson

Attachments

c: Mr. Mark Lane, Owner  
Mr. Stewart Vaghti, Gannett Fleming Inc.

## **DAM SAFETY PERMIT GENERAL CONDITIONS**

### **APPROVAL OF PLANS AND SPECIFICATIONS FOR DAM AND RESERVOIR CONSTRUCTION, ENLARGEMENT, REPAIR, ALTERATION OR REMOVAL**

The following General Conditions shall be adhered to for all Dam Safety permits unless otherwise authorized in writing.

1. Actual construction, enlargement, repair, alteration or removal shall be completed within 5 years of issuance of the permit application approval unless an extension authorized in writing by the Board is issued.
2. Prior to the start of work the owner or applicant shall provide a construction engineer to ensure compliance with the approved plans and specifications and who shall have ultimate responsibility for the supervision of all inspection tasks. The construction engineer may assign some inspection tasks to a duly authorized agent under the construction engineer's supervision. The engineer shall be licensed in the State of Hawaii.
3. The construction engineer shall maintain a record of construction that at a minimum, shall include, daily activity, and progress reports, all test results pertaining to construction; photographs sufficient to provide a record of foundation conditions and various stages of the construction through completion, all geologic information obtained; and construction problems and remedies.
4. A construction quality assurance plan shall be prepared and submitted to the Department for approval prior to the start of construction, which details the minimum requirements of the construction engineer's observation of construction.
5. A construction schedule, which includes the notice to proceed date and estimated project duration and a construction emergency action plan shall be submitted prior to the preconstruction meeting.
6. A preconstruction meeting shall be held subsequent to submitting the quality assurance plan, construction schedule and construction emergency action plan, but not later than 14 days prior to the start of construction. All parties actively involved in the construction should be requested to attend, such as the dam owner, the design engineer, the construction engineer, the contractor and the Department.
7. The Department shall be notified 5 calendar days prior to the commencement of construction.
8. Any changes from the approved plans and specifications shall be approved by the design engineer and a change order, including details and supporting calculations, must be provided to the Department. Major changes must be submitted in writing with supporting documentation and approved in writing by the Department. No work shall be initiated until the approval by the Department or Board is received. Minor changes may be transmitted verbally and approved by the Department verbally provided that documentation of the change is provided to the Department within 10 days of the approval.



9. For new dam construction and for dams and reservoirs that have lowered the water level or have been drained to facilitate construction, the construction engineer shall file and obtain approval of a filling plan with the Department. The applicant/owner shall not proceed with the filling of the reservoir until it receives permission from the Department. The construction engineer shall provide documentation of monitoring during the filling operation.
10. Prior to the filling of the reservoir, the construction engineer shall submit one copy each of the approved Operations Manual and the approved Emergency Action Plan for the facility upon completion of the project as applicable.
11. The construction engineer shall give the Department at least ten days advanced notice of initial materials placement of the dam's foundation, in the cutoff trench, outlet backfill, outlet foundation, and any appurtenance requested by the Department in the approval of the plan for construction observation, to allow for observation by the Department.
12. Notice of substantial completion shall be issued by the construction engineer to the Department stating that the permitted improvements are functionally complete such that filling of the reservoir can be initiated with an approved filling plan.
13. The construction engineer shall give the Department fifteen (15) calendar days advance written notice prior to the project's final construction inspection. The construction engineer shall coordinate with the Department to conduct this inspection in the presence of the Department's dam safety personnel.
14. The construction engineer shall provide notice at least ten (10) days prior to initiating filling the reservoir, unless agreed at the final inspection.
15. If conditions are revealed which will not permit the construction, enlargement, repair, alteration, or removal of a safe dam or reservoir, the application for approval for construction, enlargement, repair, alteration, or removal shall be revoked.
16. A topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features, when required by the Department shall be completed.
17. The applicant/owner shall utilize appropriate erosion control best management practice measures during construction to minimize turbidity (such as scheduling of work during period of low stream flow) and prevent debris and construction materials, including concrete, petroleum products, and other pollutants from enter the waters of the State. Construction related water and debris should be properly disposed of in a legal and environmentally safe manner and in accordance with the Department of Health and other Federal regulations.
18. The applicant/owner shall submit a copy of the dam safety application and the plans and specifications of the proposed improvements to the County Engineer of the County for which the dam resides for compliance with County codes.
19. Within fifteen (15) calendar days of completing the project, the applicant/owner or its representative shall provide the Department with a confirmation letter of compliance, signed and stamped by the construction engineer, indicating that the construction

was completed in accordance to approved plans and specifications including any field changes. The construction engineer shall submit the remaining construction completion documents which may include, but not be limited to, as-constructed drawing, final construction report, topographic survey, record of the location of permanent monuments, log of recorded water levels and other readings from the refilling operation, long-term instrumentation monitoring plan, and affidavit showing the actual cost of construction including engineering costs, within 60 calendar days of the submittal of the final construction inspection.

20. Construction completion documents and the construction engineer's certification shall be provided to the Department within 60 days of the final construction inspection. The Department will review the submitted items and furnish acceptance or denial within 60 days of receipt of satisfactorily completed construction completion documents and close out the dam safety permit.
21. This permit does not relieve the applicant/owner of their obligations to comply with all applicable Federal, State, and County regulations.
22. In the event that historic resources; including human skeletal remains, structural remains, cultural deposits, or sand deposits are identified during construction activities, cease work in the vicinity of the find, protect the find from any disturbance, and contact the State Historic Preservation Division at (808) 243-1285.
23. Compliance with Hawaii Revised Statutes 179D, and Hawaii Administrative Rules 13-190.1.

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Engineering Division  
Honolulu, Hawaii 96813

October 27, 2017

Board of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

**APPROVE ISSUANCE OF A DLNR DAM SAFETY PERMIT AND AUTHORIZE  
REMOVAL OF DAM FROM DLNR REGULATORY OVERSIGHT  
PERMIT NO. 77 – UKUMEHAME RESERVOIRS (MA-0140)  
DAM REMOVAL, MAUI, HAWAII**

The Department of Land and Natural Resources (Department), Engineering Division (Division) hereby submits an application for your approval and authorization for the Chairperson and Department to stipulate conditions and issue a Dam Safety Permit for the subject application, "Ukumehame Reservoirs (MA-0140) - Dam Removal", pursuant to Chapter 179D Hawaii Revised Statutes and Administrative Rules, Chapter 13-190.1.

**APPLICANT:**

Mr. Matthew S. Balven  
Gannett Fleming  
3838 N. Central Ave., Suite 1900  
Phoenix, AZ 85012

**OWNER CONTACT:**

Mr. Mark Lane  
Uka, LLC (West Maui Investors)  
468 N. Camden Drive, Suite 300  
Beverly Hills, CA 90210

**Approved by the Board of  
Land & Natural Resources  
at the meeting held on  
OCT 27 2017**

**SUMMARY OF REQUEST:**

Dam Safety Permit Application for the removal of the Ukumehame Reservoirs, Maui, Hawaii, See Exhibit 1.

**LOCATION:** Maui, Hawaii, TMK: (2) 4-8-002: 015, 017, 027, 064, 066, 118 See Exhibit 2.

**BACKGROUND:**

Ukumehame Reservoirs consists of 2 reservoirs. Ukumehame Reservoirs Nos. 2 & 3 are earthen embankment reservoirs constructed along the west side of Ukumehame Gulch on the island of Maui, Hawaii. The total storage capacity of the reservoirs is 35 acre-feet (11.4 million gallons). The reservoirs have not been utilized for water supply to downstream users for many years. The dams are believed to have been constructed from onsite excavated material; however, details about the date of construction and materials used are not available. Reservoir Nos. 2 & 3 are separated by an approximately 30-foot wide earthen embankment. Reservoir No. 2 discharges into Reservoir No.



3 by way of both an uncontrolled concrete emergency spillway and a 24-in equalizer pipe within this embankment. The Reservoir No. 3 emergency spillway is located along the eastern edge of Reservoir No. 3 and discharges uncontrolled into Ukumehame Gulch. The Reservoir No. 3 principal outlet is located along the western edge of the reservoir and is a 24-in x 24-in box conduit, which is controlled at the upstream end by a sluice gate that is currently not operational. Inflow into Reservoir Nos. 2 & 3 comes primarily from the Auwai Ditch, which diverts flow from Ukumehame Gulch approximately 1,000 feet north of Reservoir No. 2. This diversion is controlled by a manually operated gate valve. Auwai Ditch is an earthen and concrete-lined ditch approximately 24-in x 24-in. Each of the two Ukumehame Reservoirs has an independent diversion from Auwai Ditch to control inflows and small contributing watersheds to the north and northwest. In June 2008, an inspection of the dam revealed a high velocity seepage flow, estimated to be greater than 100 gallons per minute (gpm) above the toe on the south side of Reservoir #3. DLNR ordered the owner to lower the reservoir to such a level that seepage from the lower embankment has ceased or is flowing below 20 gpm. Since then, Reservoir #2 was drained and Reservoir #3 was kept at approximately 8 foot level (gage height), which is 10 feet below the normal water level.

#### PROJECT DESCRIPTION:

The reservoirs will be removed by the removal of the embankment with a bottom width of 20 feet and a side slope of 2H:1V. This will result in a 200-foot-long channel spanning the distance from the original reservoir bottom to the natural gulch downstream. This “new” channel will be lined with grouted riprap to provide erosion control. The completion of this repair will result in lowering the effective height and volume capacity of the dam such that it will fall below the requirements that satisfy the definition of a dam, pursuant to Hawaii Revised Statutes Chapter 179D. The owner of the development will be responsible for the maintenance of the structure after the removal of the embankments. See Exhibit 3

#### CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

The project is entirely on privately owned lands and does not trigger the requirement for completion of an environmental assessment. See Exhibit 4 for evaluation

#### HAWAII REVISED STATUTES CHAPTER 6E-8 HISTORIC PRESERVATION REVIEW

The Division consulted with the State Historic Preservation Division (SHPD) for compliance with the Chapter 6E-8 requirements. A review of SHPD records indicates that the only historic property identified within the current project area is Site 50-50-0804438, an irrigation ditch slated for preservation, but still in operational use by residents living the Ukumehame Gulch. The dam removal proposal follows protective measures as stipulated in the preservation plan, which will include installation of orange construction fencing to identify a 10-foot buffer zone from the ditch. Based on available information, SHPD’s determination is **no historic properties affected** for the proposed project. SHPD stipulates the following:

- (1) Gannett Fleming Inc., will ensure photos are submitted to SHPD documenting the installation of the temporary protective measures (fencing) along the archaeological preservation buffers identified as Buffer Area 5 and 6 (as recorded in final plan, Subdivision file No. 4.876) prior to initiating other construction activities. Also, the requirement will be added to the plans or specifications (**This is in the construction specification Sheet G-04 under General Notes #23**);
- (2) DLNR Dam Safety includes stipulation #1 in the permit conditions (**Stipulation #1 will be in the special conditions in the Dam Safety Permit**); and

- (3) The following is attached to the permit: *In the event that historic resources; including human skeletal remains, structural remains, cultural deposits, or sand deposits are identified during construction activities, cease work in the vicinity of the find, protect the find from any disturbance, and contact the State Historic Preservation Division at (808) 243-1285. (This note is in the Dam Safety Permit General Conditions note #22)*  
See Exhibit 5 and 7.

AGENCY CONSULTATION:

The Division sent out notices to various agencies for their comments on this application. A compilation of the comments from the agencies are posted on Exhibit 6.

REMARKS:

The applicant has completed a basis of design, plans and specification and requests for the approval of a dam safety permit. The Department and its engineering consultant, Kleinfelder West, Inc. has reviewed the documents and concluded that it is sufficient for its intended purposes. The subject reservoirs are off stream, fed by a diversion ditch. The reservoir storage was used to irrigate sugar and pineapple fields and since the closing of sugar and pineapple plantation, water storage in the reservoir has not been used for many years and the ditch was modified by the owner replacing it with an 8-inch HDPE pipe diverting the water directly to current downstream users. /This modified feed satisfies the need of downstream users without the use of stored water from the reservoirs. A 2-inch HDPE line tees off from the 8-inch pipe to supply water to the taro patch situated upstream of the reservoirs. The hydrologic analysis provided by the design engineer, Gannett Fleming, shows the peak inflows during the 100-year, 24-hour storm into Reservoir Nos. 2 & 3 are 62.3 cfs. and 104.5 cfs., respectively. The peak 100-year, 24-hour flow within Ukumehame Gulch is 7,696 cfs. Under existing conditions, this entire flow is contained within the gulch and does not overtop into the reservoirs. The breach is designed to discharge into Ukumehame Gulch at the southeastern corner of Reservoir No. 3. This location and geometry of the breach are designed to reduce diverse impacts to the downstream channel and properties. The design accomplishes this because it maintains historic flow patterns by discharging directly into the gulch and directs discharges away from the downstream residence. Staff recommends approval of this permit application.

SPECIAL CONDITONS:

1. Gannett Fleming Inc. or the owner's representative will ensure photos are submitted to SHPD documenting the installation of the temporary protective measures (fencing) along the archaeological preservation buffers identified as Buffer Area 5 and 6 (as recorded in final plan, Subdivision file No. 4.876) prior to initiating other construction activities

RECOMMENDATIONS:

That the Board:


1. Approve and authorize the issuance of the Dam Safety permit for this project.
2. Authorize the Chairperson to issue a Dam Safety Permit for the Ukumehame Reservoirs (MA-0140), removal (DLNR Dam Safety Permit No. 77) subject to such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.

3. Authorize the Department to oversee performance of the permitted work and take appropriate action including but not limited to selecting and procuring testing or professional services to verify the integrity of the construction work, approval of minor revisions and changes, issuance of fines and/or revocation of the permit, if necessary.
4. Authorize the Department to remove this dam from dam safety regulatory oversight and the requirements of Hawaii Revised Statutes Chapter 179D, upon satisfactory completion of the construction project and Dam Safety Permit Conditions.

Respectfully submitted,

  
for CARTY S. CHANG  
Chief Engineer

APPROVED FOR SUBMITTAL:

  
SUZANNE D. CASE, Chairperson  
Department of Land and Natural Resources

- Exhibit(s):
1. Owner Permit Application
  2. Location Maps
  3. Construction Drawing pages
  4. Chapter 343 Environmental Assessment Review
  5. HRS Chapter 6E-8 Review
  6. Agency Consultation
  7. General permit conditions

State of Hawaii  
BOARD OF LAND AND NATURAL RESOURCES  
Department of Land and Natural Resources  
Engineering Division

DAM SAFETY PERMIT  
APPLICATION FOR APPROVAL OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION,  
ENLARGEMENT, REPAIR, ALTERATION, OR REMOVAL OF A DAM

Date of Application: 1/19/2016

Applicant:

Contact Name: Matthew S. Balven Firm / Company: Gannett FlemingMailing Address 3838 N. Central Ave., Suite 1900, Phoenix, AZ 85012Telephone: 602-553-8817 Fax: 602-553-8816 Email: mbalven@gfnet.com

The Applicant hereby applies to the Board of Land and Natural Resources for the approval of the attached plans and specification for the Ukumehame Reservoir Removal (construction, etc.) in accordance with Chapter 179D HRS (as amended by Act 262, SLH 2006), and subject to the provisions, conditions, and limitations of the current Hawaii Administrative Rules and various DLNR dam safety guidelines.

Accompanying this application are:

(please check)

- |   |                   |
|---|-------------------|
| 1. Filing fee equal to 2% of the Detailed Cost Estimate + Eng costs w/ calculation (to be submitted by owner) | <u>X</u>          |
| 2. Two (2) copies of the Detailed Cost Estimate   | <u>X</u>          |
| 3. Two (2) copies of the Final Design Report  | <u>X</u>          |
| 4. Two (2) copies of the Plans  | <u>X</u>          |
| 5. Two (2) copies of the Specifications   | <u>(on Plans)</u> |
| 6. Proposed Construction Schedule   | <u>X</u>          |
| 7. Supporting documents:  | <u>X</u>          |
| 8. One (1) electronic copy of all the above   | <u>X</u>          |
| _____   | _____             |
| _____   | _____             |
| _____   | _____             |

NAME OF STRUCTURE: Ukumehame Reservoir Nos. 2 & 3 Removal, NatID HI00140 (StateID MA-0140)DAM OR RESERVOIR LOCATION: Latitude: -156.5871, Longitude: 20.8099Island: MauiTax Map Key: (2) 4-8-002: 015, 017, 027, 064, 066, 118

Attach USGS topographic map (scale 1" = 2000') and property tax map (showing location access to site, proposed work)

State Land Use District: X Agriculture      Urban      Rural      Conservation

## BRIEF DESCRIPTION OF WORK TO BE PERFORMED

Removal of Ukumehame Reservoirs 2 & 3 by breaching.

**TECHNICAL INFORMATION:**

DLNR-Dam Safety-Sheet 2

1. Drainage Area 0.024 sq. miles or 15.4 acres
2. Classification of Dam (Hazard/Size) High Hazard
3. Type of Structure Earthen Embankment
4. Elevation-Area-Capacity Data:

|                    | Elevation | Surface Area<br>(acres) | Total Storage<br>Volume (acre-feet) |
|--------------------|-----------|-------------------------|-------------------------------------|
| Natural Streambed  | NA        | NA                      | NA                                  |
| Primary Spillway   | 171.7 ft  | ~2                      | 35                                  |
| Secondary Spillway | NA        | NA                      | NA                                  |
| Top of Dam         | 174.0 ft  | 2.3                     | 44                                  |
| Design Water Level | Unknown   |                         |                                     |
| Invert of Drain    | Unknown   |                         |                                     |
5. Spillway Details (Type, Dimensions, Material) (for Ukumehame Res. 3)  
Primary: Ungated concrete structure, 4 cells, 5' wide x 2.5' high (total 20' x 2.5')  
Secondary: NA
6. Purpose of Structure Irrigation  
(water supply, irrigation, recreation, real estate development, etc.)
7. Attach rainfall and stream flow records, and flood-flow records and estimates (as accurately as may be readily obtained)

**ADDITIONAL INFORMATION**

1. Primary Owner Contact (if different from applicant) Mark Lane  
Owner Company or Entity: Uka, LLC (West Maui Investors)  
Mailing Address 468 N. Camden Dr., Ste 300, Beverly Hills, CA 90210  
Telephone: 310-276-1290 Fax: \_\_\_\_\_ Email: \_\_\_\_\_
2. Registered Hawaii Professional Engineer who prepared the plan Stewart Vaghti, PE  
Mailing Address 3838 N. Central Ave, Suite 1900, Phoenix, AZ 85012  
Registration No. \_\_\_\_\_  
Telephone: 602-553-8817 Fax: 602-553-8816 Email: svaghti@gfnet.com
3. Registered Professional Engineer to be responsible for inspection during construction Stewart Vaghti, PE
4. Contractor (If known) Unknown  
Mailing Address \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_
5. List all other permits applications submitted to other governmental agencies:  
\_\_\_\_\_  
\_\_\_\_\_
6. Anticipated effect of proposed structure on natural environment: Limited effect expected,  
small drainage area previously impounded will now flow into Ukumehame Gulch.



7. List all other parties that have ownership or other interest on the parcels where the dam and reservoir are located and identify their interest in the property. The Owners herein listed below concur with the work proposed within this application by the applicant and by his/her signing hereto, the owner of the land extends to the Board of Land and Natural Resources, and its designated representatives, a right-of-entry onto the project site to conduct any investigations or inspections required in compliance with the provisions of Chapter 13-190.1, Hawaii Administrative Rules. (Submit additional copies of this sheet should there be more owners)

Joseph Daneshgar, Manager  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

\_\_\_\_\_  
(Printed Name & Signature of Owner)

\_\_\_\_\_  
(Address / TMK/Interest in Dam or Reservoir)

I, Matthew S. Balven, the applicant, hereby certify that the information herein is true and factual to the best of my knowledge. Signing below indicates that the applicant understands that, if the permit requested is granted by the Board of Land and Natural Resources, the proposed work is to be initiated and completed within five (5) years of the approval date, unless specifically permitted in the approved permit terms and conditions.

  
(Signature of Applicant & Title)

Date: January 19, 2016

MAUI COUNTY NOR ITS EMPLOYEES ASSUME RESPONSIBILITY FOR ERRORS OR OMISSIONS --THIS IS NOT A SURVEY--

Date printed: 09/27/17 : 18:24:26

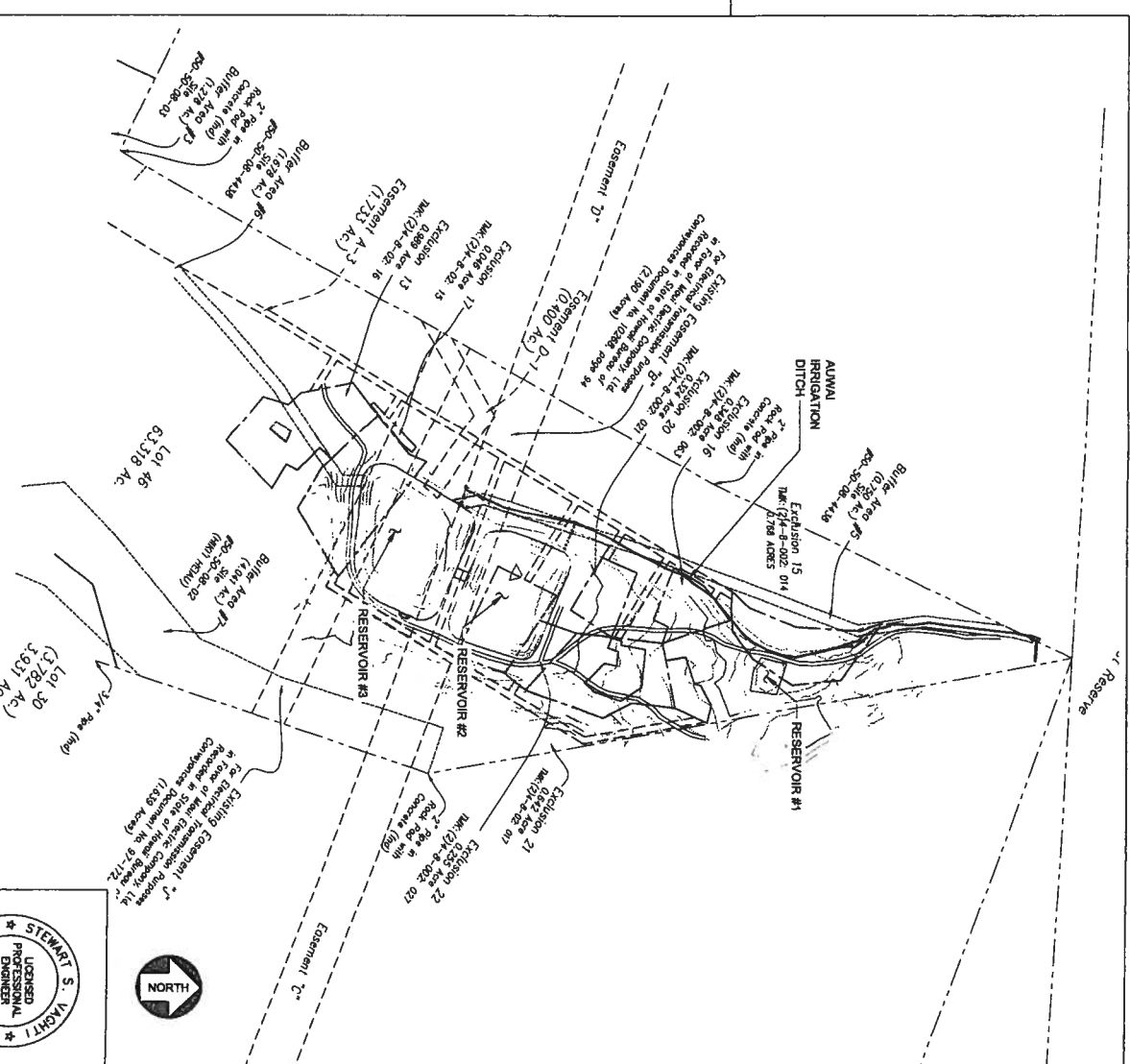
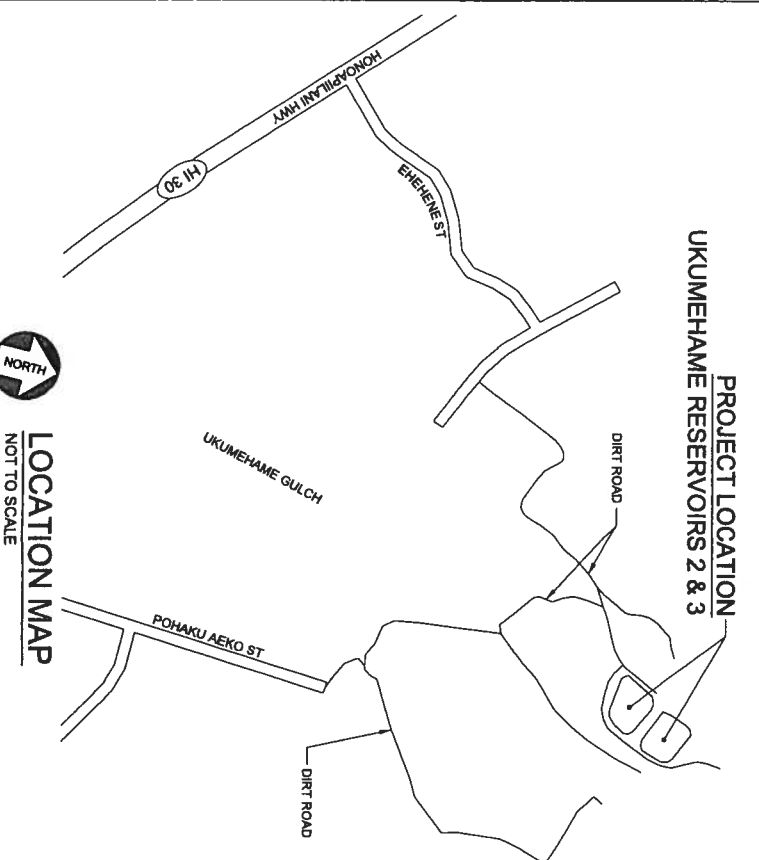
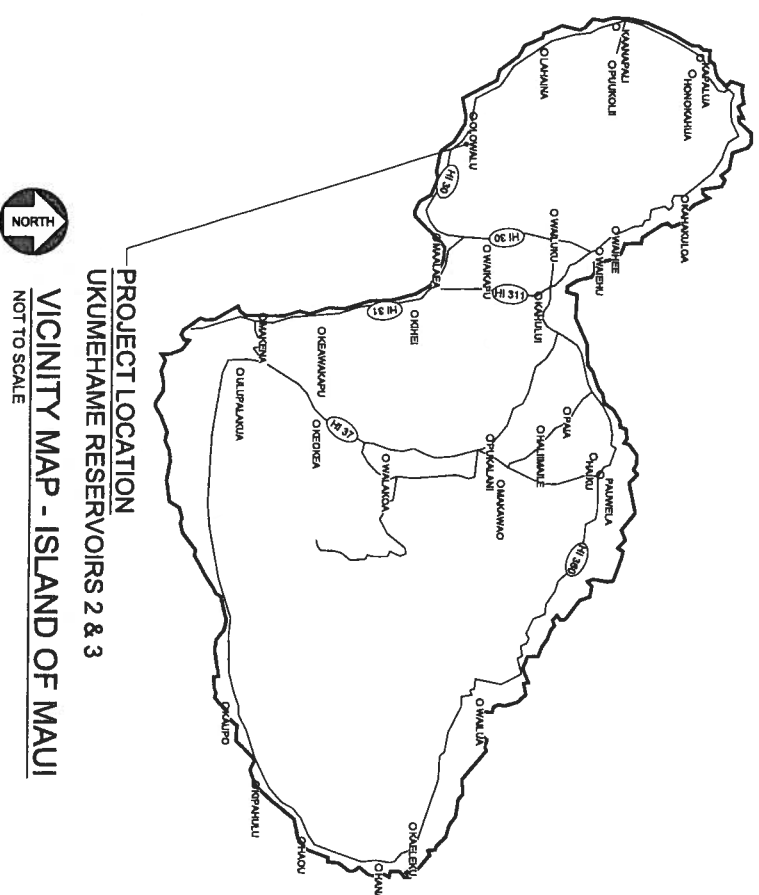
# UKUMEHAME RESERVOIRS NOS. 2 & 3 DAM REMOVAL AND GRADING

**TAX MAP KEYS:** (2) 4-8-002:066, (2) 4-8-002:015, (2) 4-8-002:017,  
(2) 4-8-002:027, (2) 4-8-002:064, (2) 4-8-002:118

UKUMEHAME, LAHAINA, MAUI, HAWAII  
HAWAII STATE DAM INVENTORY ID: MA-140

**JANUARY, 2016  
FINAL SUBMITTAL**

| SHEET INDEX                                      |           |         |
|--|-----------|---------|
| DESCRIPTION                                      | SHEET NO. | DWG NO. |
| COVER  | 1         | G-01    |
| SPECIFICATIONS (1 OF 3)                          | 2         | G-02    |
| SPECIFICATIONS (2 OF 3)                          | 3         | G-03    |
| LEGEND, ABBREVIATIONS & SPECIFICATIONS (3 OF 3)  | 4         | G-04    |
| EXISTING CONDITIONS                              | 5         | V-01    |
| DEMOLITION PLAN                                  | 6         | D-01    |
| OVERALL SITE GRADING AND HORIZONTAL CONTROL PLAN | 7         | C-01    |
| DMA BENCH GRADING PLAN & PROFILE                 | 8         | C-02    |
| EROSION CONTROL PLAN                             | 9         | EC-01   |
| EROSION CONTROL DETAILS                          | 10        | EC-02   |

[illegible]

# Gannett Fleming

3838 North Central Avenue, Suite 1900, Phoenix, AZ 85012-1985  
Phone (602) 553-8817 Fax (602) 553-8818 Web [www.gfnet.com](http://www.gfnet.com)

|                 |   |                |
|-----------------|---|----------------|
| DESIGNED: ALL   | UKUMI/HAHE RESERVOIRS NO. 2 & 3<br>DAM REMOVAL AND GRADING<br><br>COVER | JOB NO.: 58305 |
| DRAWN: ALL      |   | DATE: JAN 2016 |
| CHECKED: SSV    |   |                |
| SCALE: AS NOTED |   | G-01           |

|         |          |
|---------|----------|
| JOB NO: | 58305    |
| DATE:   | JAN 2016 |
|         | G-01     |



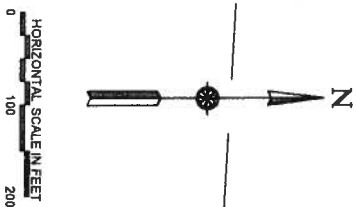
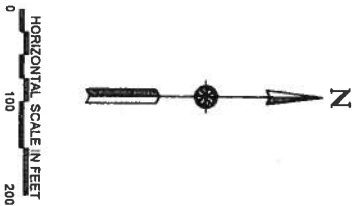
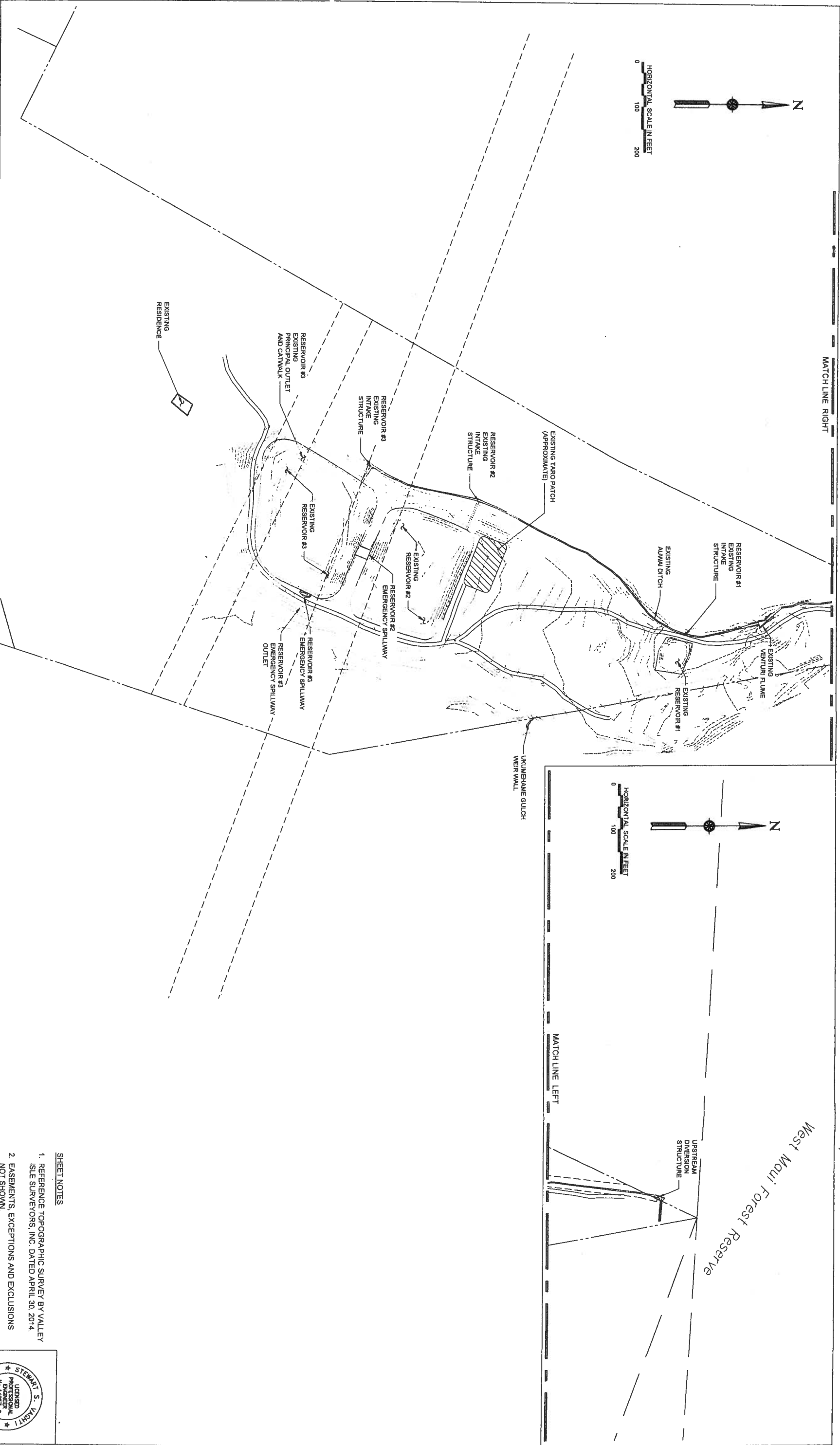
THIS WORK WAS PREPARED BY ME OR  
UNDER MY SUPERVISION.

DATE ISSUED BY ISSUING OFFICE  
DATE RECEIVED BY FIELD OFFICE  
DATE RECEIVED BY LABORATORY

SIGNATURE \_\_\_\_\_

4/30/2016

LABORATORY DATE



SHEET NOTES


1. REFERENCE TOPOGRAPHIC SURVEY BY VALLEY ISLE SURVEYORS, INC. DATED APRIL 30, 2014.
2. EASEMENTS, EXCEPTIONS AND EXCLUSIONS NOT SHOWN.


| REVISION NO. | DESCRIPTION         | DATE       |
|--------------|---------------------|------------|
| 0            | FOR PERMIT APPROVAL | 01/19/2016 |

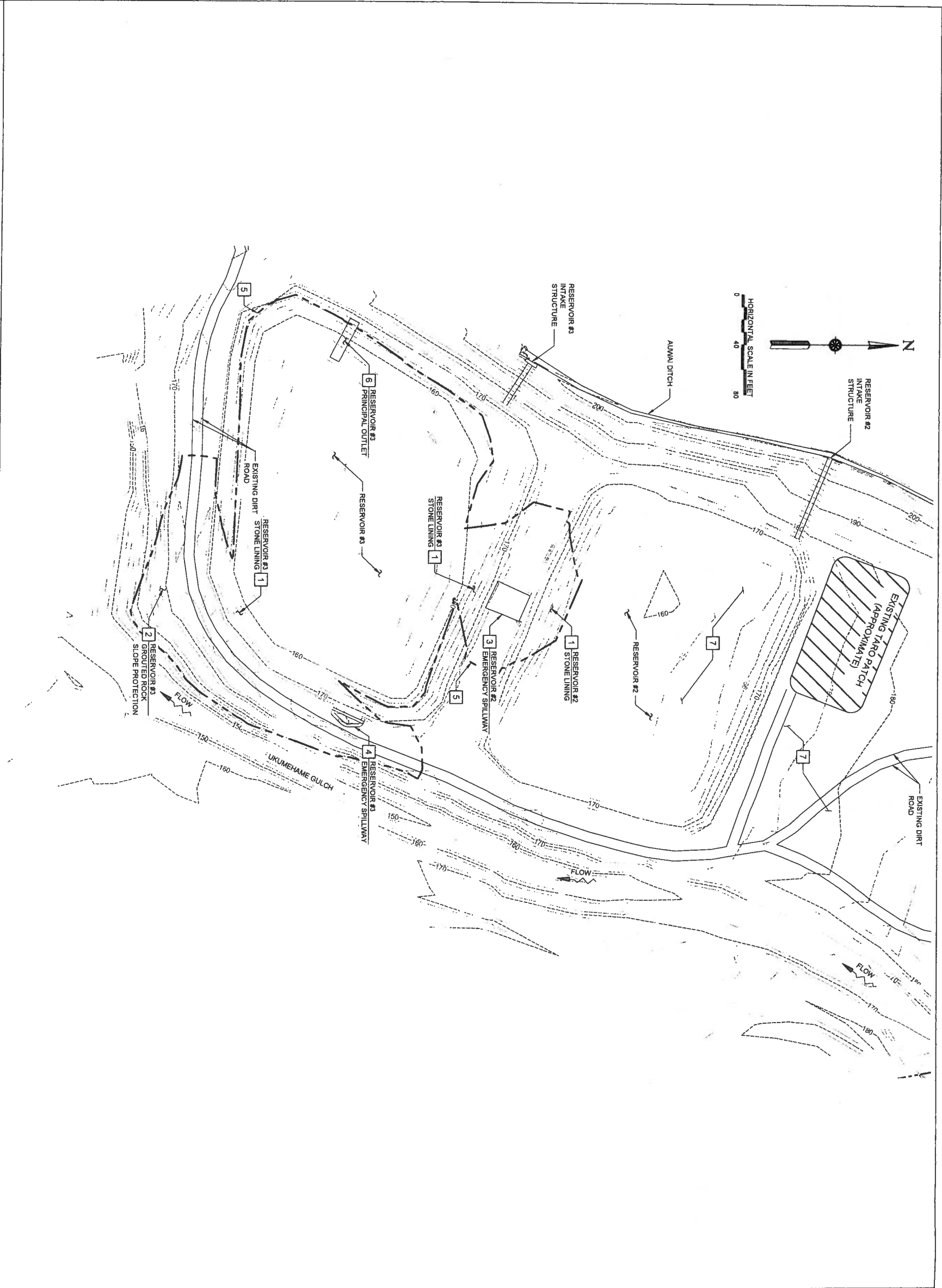
**Gannett Fleming**  
3828 North Central Avenue, Suite 1800, Phoenix, AZ 85012-1857  
Phone (602) 553-9817 Fax (602) 553-9818 Web www.gfl.com

**1-800-423-7287**  
Toll Free 24 Hours a Day  
Call Collect

|                 |                                |                |
|-----------------|--------------------------------|----------------|
| DESIGNED: ALL   | UKUMEHAME RESERVOIRS NO. 2 & 3 | JOB NO: 58305  |
| DRAWN: ALL      | DAM REMOVAL AND GRADING        | DATE: JAN 2016 |
| CHECKED: SSV    | EXISTING CONDITIONS            |                |
| SCALE: AS NOTED |                                | V-01           |

**STEWART S. YAMAMOTO**  
LICENSED PROFESSIONAL ENGINEER  
No. 14657-C  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A duly Licensed Professional Engineer in the State of Hawaii.  
SIGNATURE:  DATE: 4/20/2016  
LICENSE EXPIRATION DATE

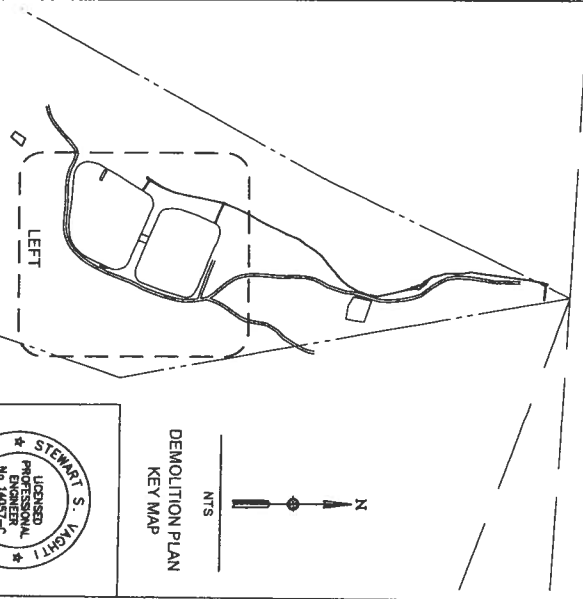


DEMOLITION NOTES

- 1 REMOVE STONE AND CONCRETE RESERVOIR LINING WITHIN EXCAVATION AND GRADING EXTENTS AND STOCKPILE FOR FUTURE USE. (EXISTING LIMITS UNKNOWN)
- 2 REMOVE RESERVOIR 3 GROUTED ROCK SLOPE PROTECTION WITHIN EXCAVATION AND GRADING EXTENTS AND STOCKPILE FOR FUTURE USE. (EXISTING LIMITS UNKNOWN)
- 3 REMOVE RESERVOIR 2 EMERGENCY SPILLWAY.
- 4 REMOVE RESERVOIR 3 EMERGENCY SPILLWAY.
- 5 CLEAR AND GRUB WITHIN WORK AREA.
- 6 CLOSE SLUICE GATE AND CUT STEM AND FRAME AT TOP OF SLUICE GATE. LEAVE NOT LIMITED TO. WOODEN CATWALK STRUCTURE, STEM AND FRAME.
- 7 CLEAR AND GRUB WITHIN APPROVED STAGING AREAS AS NECESSARY.

SHEET NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND/OR SALVAGE ITEMS SHOWN AND NOT SHOWN IN ORDER TO COMPLETE THE PROJECT.
2. THE DEMOLITION ITEMS AND EXTENTS SHOWN ARE APPROXIMATE. VARIATIONS IN QUANTITIES AND/OR DEMOLITION ITEMS SHALL BE INCLUDED IN THE CONTRACTOR'S BID AND SHALL BE PERFORMED AT NO ADDITIONAL COST
3. ALL MATERIALS NOT APPROVED FOR RE-USE SHALL BE LEGALLY DISPOSED OF AT AN APPROVED DISPOSAL FACILITY.



|                 |  |                                |  |                                    |  |
|-----------------|--|--------------------------------|--|------------------------------------|--|
| DESIGNED: ALL   |  | UKUMEHAME RESERVOIRS NO. 2 & 3 |  | JOB NO: 58305                      |  |
| DRAWN: ALL      |  | DAM REMOVAL AND GRADING        |  | DATE: JAN 2016                     |  |
| CHECKED: SSV    |  | DEMOLITION PLAN                |  | SCALE: D-01                        |  |
| SCALE: AS NOTED |  |                                |  | LICENCE EXPIRATION DATE: 4/30/2016 |  |
| REVISION NO.    |  | DESCRIPTION                    |  | DATE                               |  |
| 0               |  | FOR PERMIT APPROVAL            |  | 01/19/2016                         |  |

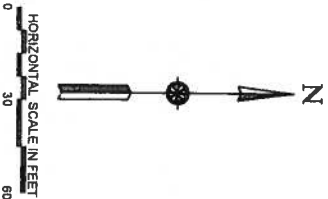
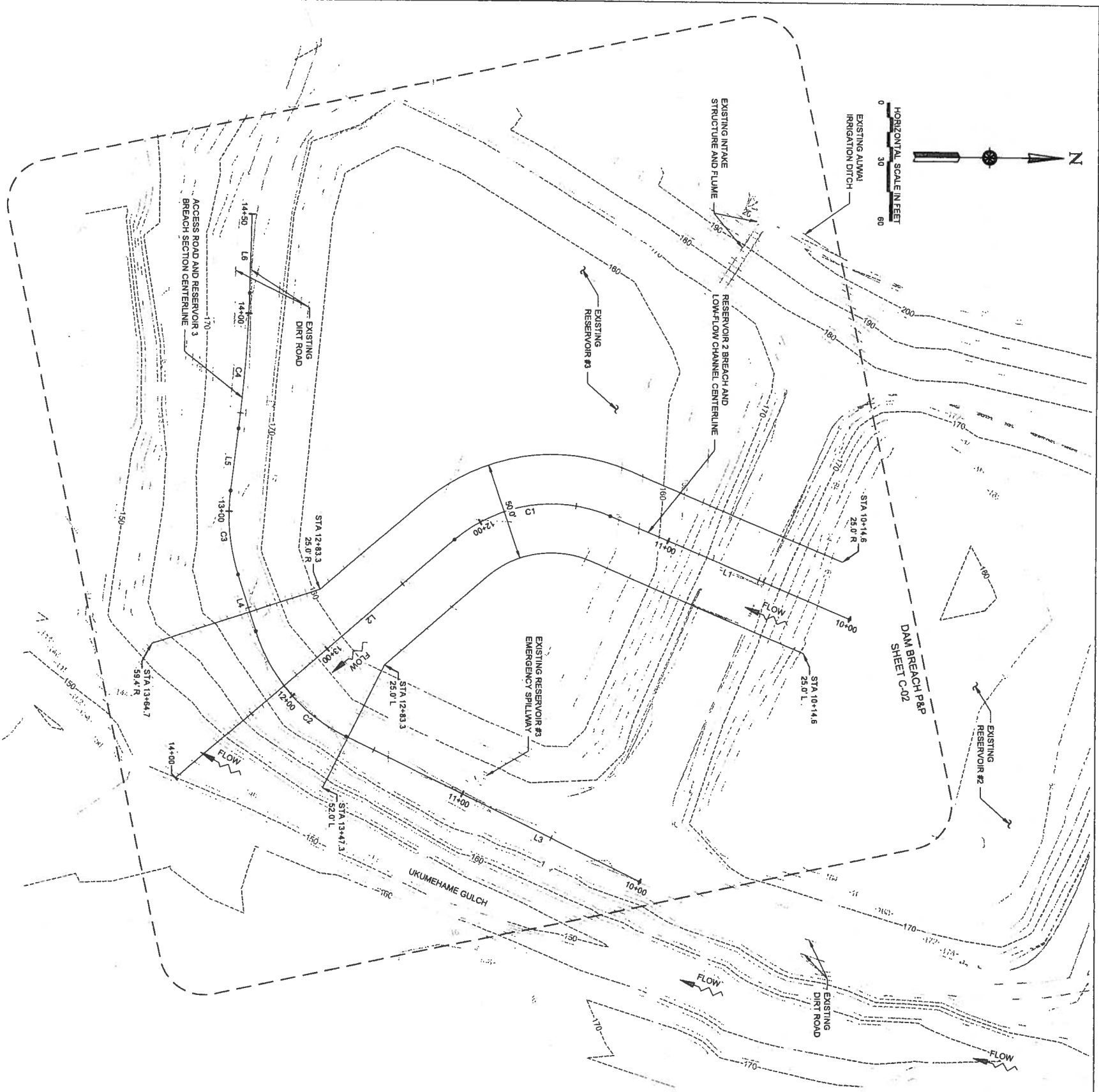
**Gannett Fleming**  
3838 North Central Avenue, Suite 1800, Phoenix, AZ 85012-1887  
Phone (602) 553-4817 Fax (602) 553-4816 Web www.gfl.com

STEWART S. WRIGHT  
LICENSED PROFESSIONAL ENGINEER  
No. 14857-C  
STATE OF ARIZONA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
DATE: 1/19/2016  
SIGNATURE: [Signature]  
LICENCE EXPIRATION DATE: 4/30/2016

Copyright 2016 ©






| ALIGNMENT LINE DATA |        |                  |                            |                            |
|---------------------|--------|------------------|----------------------------|----------------------------|
| LINE #              | LENGTH | DIRECTION        | START POINT                | END POINT                  |
| L1                  | 131.98 | S23° 09' 45.18"W | N: -3114.85<br>E: 10411.26 | N: -3238.30<br>E: 10359.35 |
| L2                  | 184.29 | S40° 48' 13.75"E | N: -3314.61<br>E: 10371.53 | N: -3454.30<br>E: 10491.98 |
| L3                  | 165.63 | S28° 16' 28.69"W | N: -3220.21<br>E: 10344.17 | N: -3368.72<br>E: 10470.85 |
| L4                  | 29.77  | S72° 07' 03.80"W | N: -3414.53<br>E: 10417.79 | N: -3423.67<br>E: 10389.46 |
| L5                  | 31.56  | N83° 08' 32.95"W | N: -3427.79<br>E: 10346.81 | N: -3424.02<br>E: 10315.48 |
| L6                  | 39.83  | N88° 42' 38.55"W | N: -3419.19<br>E: 10247.65 | N: -3418.29<br>E: 10207.83 |


| ALIGNMENT CURVE DATA |        |        |                  |  |
|----------------------|--------|--------|------------------|--|
| CURVE #              | RADIUS | LENGTH | CHORD DIRECTION  | START POINT      END POINT                                   |
| C1                   | 75.00  | 83.73  | S8° 49' 14.20"E  | N: -3236.30      N: -3314.61<br>E: 10359.35      E: 10371.53 |
| C2                   | 90.00  | 72.01  | S49° 11' 46.25"W | N: -3368.72      N: -3414.53<br>E: 10470.85      E: 10417.79 |
| C3                   | 100.00 | 43.18  | S84° 28' 15.42"W | N: -3423.67      N: -3427.79<br>E: 10389.46      E: 10346.81 |
| C4                   | 700.00 | 68.03  | N85° 55' 35.75"W | N: -3424.02      N: -3419.19<br>E: 10315.48      E: 10247.65 |

|          |    |                     |            |
|----------|----|---------------------|------------|
| REVISION | NO | DESCRIPTION         | DATE       |
| 0        |    | FOR PERMIT APPROVAL | 01/19/2016 |

**Gannett Fleming**  
3838 North Central Avenue, Suite 1000, Phoenix, AZ 85012-1857  
Phone (602) 553-8817 Fax (602) 553-8816 Web www.gfnet.com

**1-866-423-7287**  
Toll-free, 24-hour, 365-day-a-year  
Direct Line and Customer Service

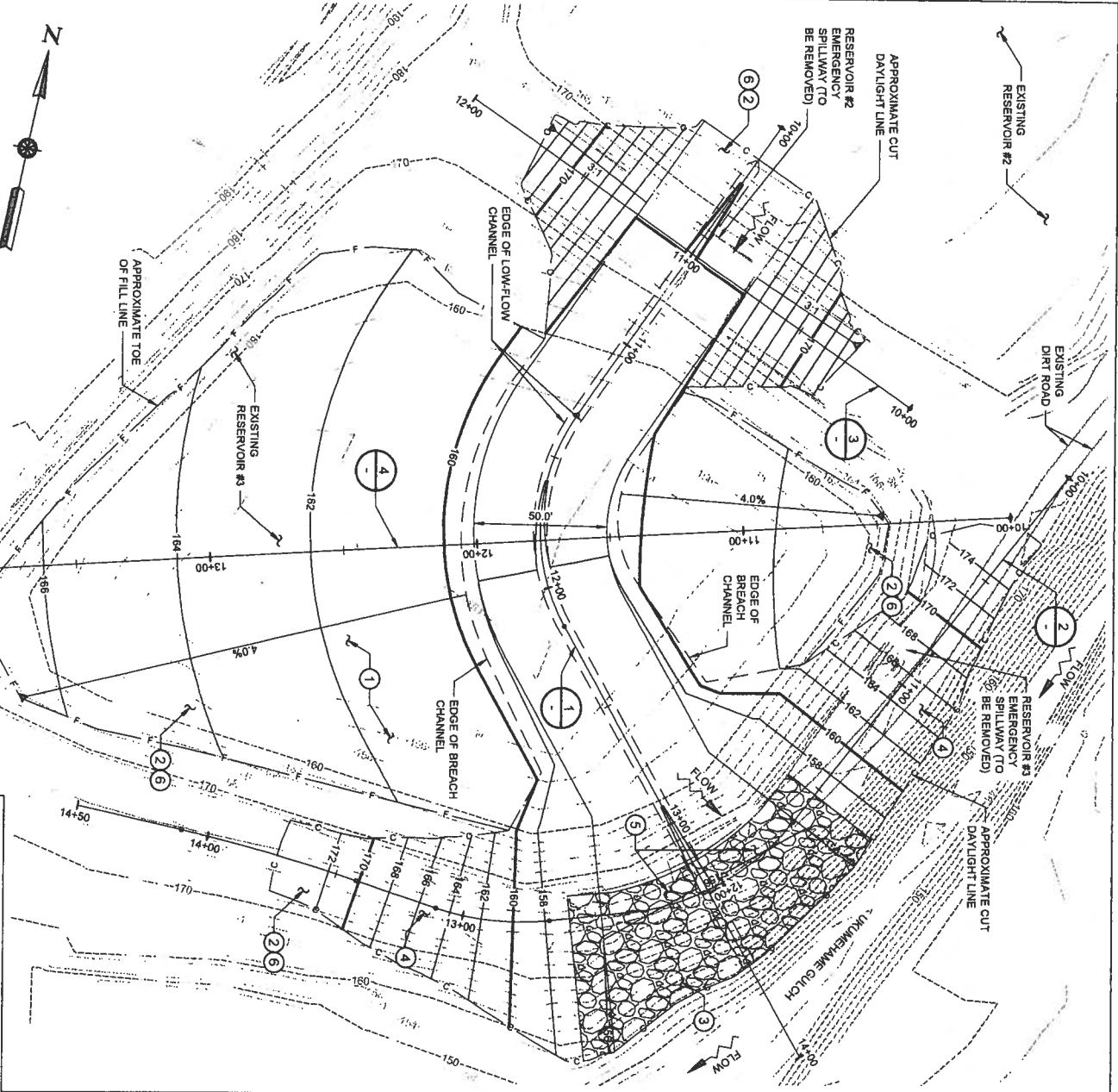
|           |          |                                |          |
|-----------|----------|--------------------------------|----------|
| DESIGNED: | ALL      | UKUMEHAME RESERVOIRS NO. 2 & 3 | JOB NO:  |
| DRAWN:    | ALL      | DAM REMOVAL AND GRADING        | 58305    |
| CHECKED:  | SSV      | OVERALL SITE GRADING AND       | DATE:    |
| SCALE:    | AS NOTED | HORIZONTAL CONTROL PLAN        | JAN 2016 |
|           |          |                                | C-01     |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
I am a duly Licensed Professional Engineer in the State of Arizona.  
My License No. is 1585-C  
My Expiration Date is 12/31/2018

STEWART S. VAGITT  
LICENSED PROFESSIONAL ENGINEER  
No. 1585-C  
MAINTAIN U.S. & AZ  
EXPIRATION DATE 12/31/2018

Copyright 2016 ©

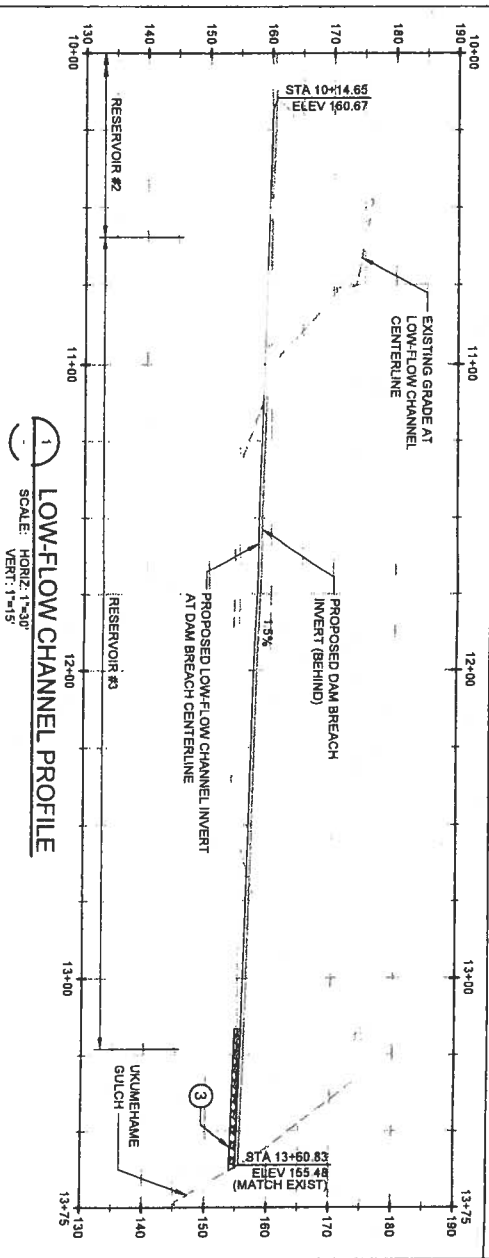


## CONSTRUCTION NOTES

1. STRIP AND STOCKPILE TOPSOIL PRIOR TO BEGINNING GRADING ACTIVITIES.
2. GRADE SITE PER CONTOURS, GRADES, SECTIONS AND PROFILES. ALLOW FOR RIP-RAP PLACEMENT, PROCESS, PLACE AND COMPACT FILL MATERIAL PER NOTES AND SPECIFICATIONS ON SHEET G-04.
3. PLACE RIP-RAP (FROM SALVAGED LINING AND GROUTED ROCK SLOPE PROTECTION) PER EXTENTS ON PLAN. MINIMUM THICKNESS SHALL BE 2X D50 SIZE OR 12", WHICHEVER IS GREATER.
4. PROVIDE DRIVEABLE ACCESS ROAD CONNECTION THROUGH BREACH SECTION. ROAD SHALL BE WITHIN CUT SECTION. IF FILL MATERIAL IS USED UNDER THE ACCESS ROAD, COMPACT TO 95% MAXIMUM DENSITY (ASTM D698).
5. ARRANGE RIP-RAP 6' ON EITHER SIDE OF ROAD CENTERLINE FOR A DRIVEABLE SURFACE (MIN. 12' WIDE).
6. REPLACE TOPSOIL AND HYDROSEED DISTURBED AREAS AFTER FINISH GRADING IN ACCORDANCE WITH MAUI COUNTY STANDARD SPECIFICATIONS SECTION 51 (INCLUDING STAGING AND OTHER DISTURBED AREAS).

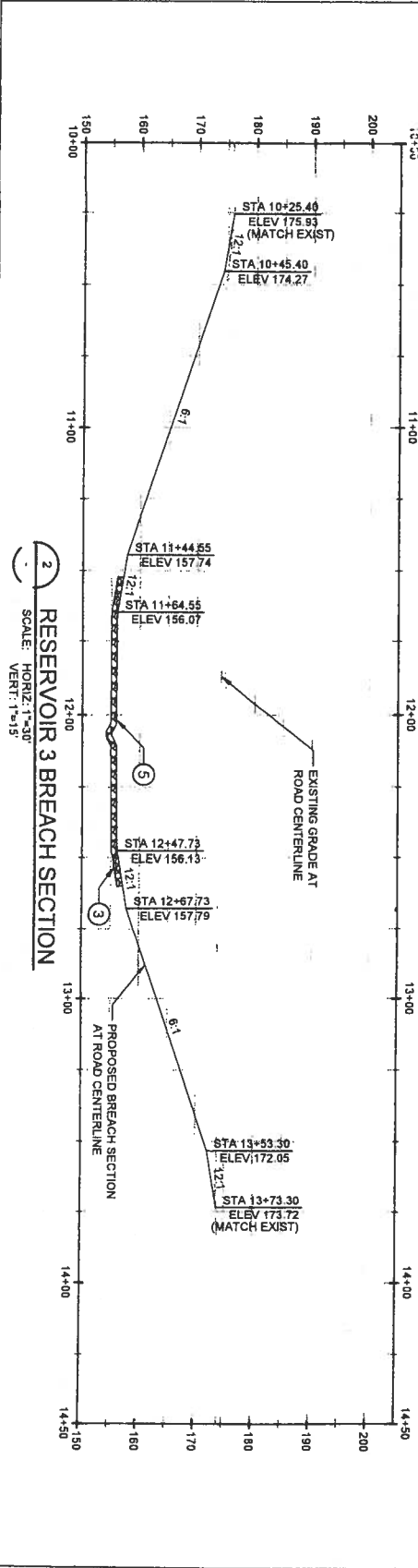
### SHEET NOTES

1. SEE SHEETS G-02, G-03 AND G-04 FOR ADDITIONAL NOTES AND SPECIFICATIONS.
2. PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES, DRAIN RESERVOIRS AND ALLOW SILT AND RESERVOIR TO DRY SUCH THAT SILT CAN BE BLENDED WITH FILL MATERIAL TO MEET COMPACTION REQUIREMENTS.
3. ALL GRADING SHALL BE BLENDED WITH ADJACENT GRADES TO PROVIDE SMOOTH TRANSITIONS.



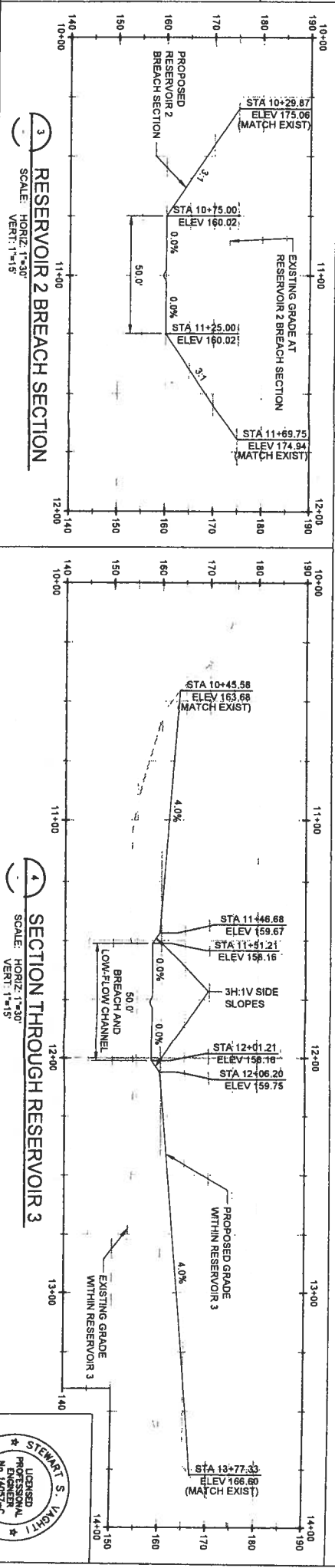
## LOW-FLOW CHANNEL PROFILE

SCALE: HORIZ. 1"=30'  
VERT. 1"=15'



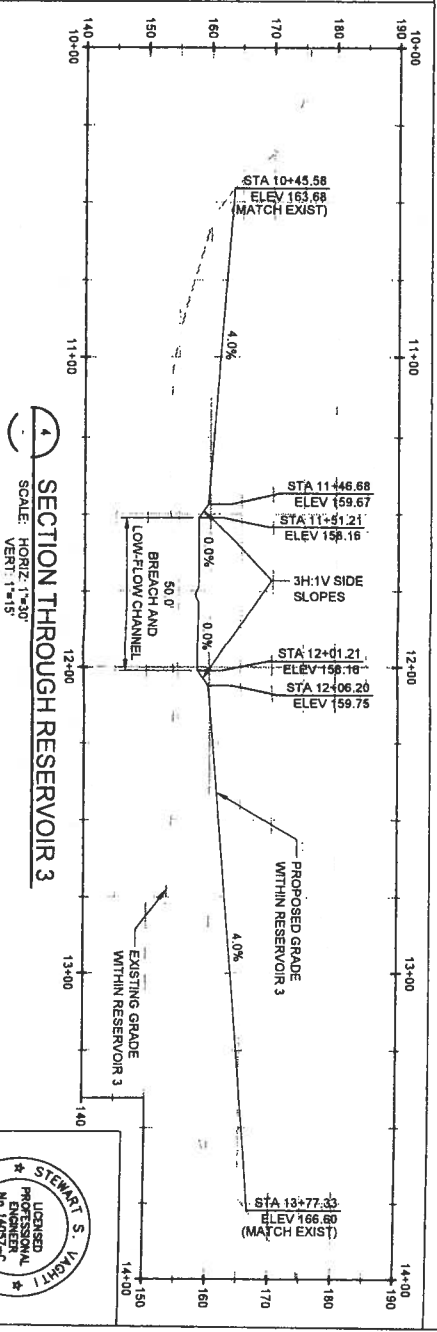
## RESERVOIR #3 BREACH SECTION

SCALE: HORIZ. 1"=30'  
VERT. 1"=15'



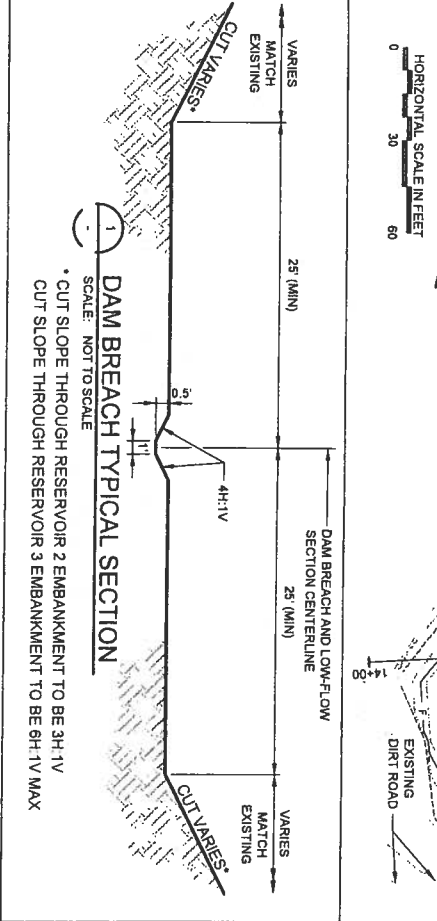
## RESERVOIR #2 BREACH SECTION

SCALE: HORIZ. 1"=30'  
VERT. 1"=15'



## SECTION THROUGH RESERVOIR #3

SCALE: HORIZ. 1"=30'  
VERT. 1"=15'

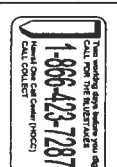


## DAM BREACH TYPICAL SECTION

SCALE: NOT TO SCALE

- \* CUT SLOPE THROUGH RESERVOIR #2 EMBANKMENT TO BE 3H:1V
- \* CUT SLOPE THROUGH RESERVOIR #3 EMBANKMENT TO BE 6H:1V MAX

| REVISION NO. | DESCRIPTION         | DATE       |
|--------------|---------------------|------------|
| 0            | FOR PERMIT APPROVAL | 01/19/2016 |



|               |                 |
|---------------|-----------------|
| DESIGNED: ALL | DRAWN: ALL      |
| CHECKED: SSV  | SCALE: AS NOTED |

UKUMEHAME RESERVOIRS NO. 2 & 3  
DAM REMOVAL AND GRADING  
DAM BREACH GRADING,  
PLAN & PROFILE

JOB NO. 58305  
DATE: JAN 2016  
C-02

THIS WORK WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII.  
SIGNATURE: [Signature]  
LICENSE EXPIRATION DATE: 4/30/2016  
Copyright 2016

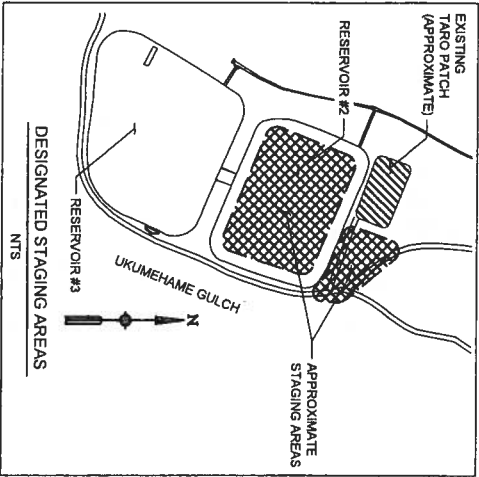
GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE PLANS, CONTRACT DOCUMENTS AND THE MOST RECENT VERSIONS OF THE COUNTY OF MAUI "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" AND "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
2. PROPOSED CHANGES OR WORK RESULTING IN CHANGES TO THE PLANS ARE SUBJECT TO REVIEW AND APPROVAL BY THE OWNER, CONSTRUCTION ENGINEER AND DLNR DAM SAFETY. IF A PROPOSED CHANGE IS CONSIDERED "SIGNIFICANT" PER DLNR DAM SAFETY, IT SHALL RECEIVE WRITTEN APPROVAL BY DLNR DAM SAFETY PRIOR TO INITIATION AND/OR ACCEPTANCE. ANY REWORK REQUIRED AS A RESULT OF NOT RECEIVING AUTHORIZATION IN ADVANCE IS THE CONTRACTOR'S RESPONSIBILITY AT NO ADDITIONAL COST.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER(S) FOR SITE ACCESS TO AND FROM PUBLIC STREETS AT ALL TIMES.
4. THE OWNER RESERVES THE RIGHT TO AMEND THE DESIGN PLANS IF CHANGES ARE DETERMINED TO BE NECESSARY AS CONSTRUCTION PROGRESSES.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME, IN THE EVENT OF DAMAGES DUE TO CONSTRUCTION PRACTICES. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE RESPECTIVE UTILITY COMPANIES. THE CONTRACTOR INDEMNIFIES THE STATE AND DESIGNERS OF RECORD FROM ANY CLAIMS CONSEQUENT TO OR ARISING FROM ANY DAMAGES, LOSS OR PERSONAL INJURY RESULTING FROM CONTACT WITH EXISTING UTILITIES.
6. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION AND ORDERING PARTS OR MATERIALS. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER OR THEIR CONTRACTING OFFICER.
7. CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY SO AS TO CAUSE ROCK, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATER COURSES. SHOULD SUCH INCIDENTS OCCUR, THE COSTS INCURRED FOR ANY DAMAGES, FINES AND REMEDIAL ACTION SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
8. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF CHAPTER 54, WATER QUALITY STANDARDS, AND CHAPTER 55, WATER POLLUTION CONTROL, OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE OF HAWAII DEPARTMENT OF HEALTH.
9. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING, MAINTAINING AND UPDATING THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS NECESSARY TO MEET THE REQUIREMENTS OF THE NPDES CONSTRUCTION GENERAL PERMIT.
10. PRIOR TO COMMENCING ANY EXCAVATION OR EARTH-MOVING ACTIVITIES, THE CONTRACTOR SHALL NOTIFY RELEVANT AGENCIES TO VERIFY THE ACTUAL LOCATIONS OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO STARTING WORK. THE CONTRACTOR SHALL COORDINATE ALL WORK.
11. ALL WORK CALLED FOR ON THE PLANS AND ALL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL TO THIS PROJECT AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLETE FOR NO ADDITIONAL COMPENSATION.
12. THE CONTRACTOR SHALL REPLACE IN-KIND ALL EXISTING FENCES AND GATES REMOVED FOR CONSTRUCTION, UNLESS OTHERWISE NOTED ON PLANS OR SPECIFICALLY WAIVED, IN WRITING BY THE OWNER.
13. EXISTING TOPOGRAPHIC DATA WAS TAKEN FROM TOPOGRAPHIC MAP PREPARED BY VALLEY ISLE SURVEYORS, INC., DATED APRIL 30, 2014 AND MAY NOT REFLECT CURRENT CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING CURRENT CONDITIONS AND NOTIFYING THE OWNER OF ANY CHANGES IN ADVANCE OF PERFORMING THE WORK.
- AZIMUTHS AND COORDINATES REFERRED TO GOVERNMENT SURVEY TRIANGULATION STATION "KILEA"
- ELEVATIONS ARE BASED ON MEAN SEA LEVEL.
14. CONTRACTOR SHALL NOT DISTURB THE EXISTING TARO PATCH OR ITS WATER SOURCE.
15. ALL STAGING AND CONSTRUCTION ACTIVITIES SHALL BE WITHIN THE DESIGNATED STAGING AND CONSTRUCTION AREAS. THE CONTRACTOR SHALL NOT DISTURB OR WORK OUTSIDE THESE AREAS WITHOUT PRIOR APPROVAL FROM THE OWNER AND PERMIT AUTHORITIES.
16. THE CONTRACTOR SHALL COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS AND IS RESPONSIBLE FOR COMPLIANCE OF ALL SUB-CONTRACTORS AND ANY PERSONNEL WHO ENTER THE SITE.
17. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND FOR MEETING AND COMPLYING WITH ALL PERMIT CONDITIONS AND REQUIREMENTS. ANY RE-WORK, DELAYS OR CHANGES THAT OCCUR AS A RESULT OF NOT MEETING OR COMPLYING WITH THE PERMIT CONDITIONS OR REQUIREMENTS ARE THE CONTRACTOR'S RESPONSIBILITY AT THEIR EXPENSE.
18. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DELIVERY, STORAGE, PROTECTION AND HANDLING OF MATERIALS AND EQUIPMENT, INCLUDING MEETING THE MANUFACTURER'S OR SUPPLIER'S RECOMMENDATIONS AND SPECIFICATIONS. LOST, DAMAGED OR MISHANDLED EQUIPMENT OR MATERIALS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
19. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND SHALL NOTIFY THE OWNER IF DISCREPANCIES ARE FOUND PRIOR TO PERFORMING WORK. CHANGES IN CONDITIONS OR QUANTITIES ARE NOT GROUNDS FOR CHANGES IN CONTRACT PRICE WITHOUT THE PRIOR WRITTEN APPROVAL FROM THE OWNER (OR THE OWNER'S AUTHORIZED AGENT).
20. THE CONTRACTOR IS RESPONSIBLE FOR TYING INTO THE PROJECT HORIZONTAL AND VERTICAL CONTROLS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN PROJECT CONTROLS IN ACCORDANCE WITH ACCEPTED SURVEYING PRACTICE AND SHALL PERFORM THE WORK TO THE LINES, GRADES AND/OR INTENTS SHOWN ON THE CONTRACT DOCUMENTS.
21. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL STATUTES, CODES, LAWS, ORDINANCES, RULES, AND CONDITIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCE HISTORICAL PROPERTIES REQUIREMENTS
  - STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCE HISTORICAL PROPERTIES REQUIREMENTS
  - WITH, AND ACCOMMODATIONS FOR ALL PROPERTY OWNERS AND/OR STAKEHOLDERS. SEE ALSO CONSTRUCTION PROGRESS SCHEDULE AND NOTIFICATIONS NOTE #3 ON SHEET G-03.
23. PRIOR TO INITIATING OTHER CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL INSTALL TEMPORARY PROTECTIVE FENCING MEASURES AROUND DOCUMENTED ARCHAEOLOGICAL PRESERVATION BUFFERS REFERRED TO AS BUFFER AREA #3 AND BUFFER AREA #6 AND AS IDENTIFIED ON THESE PLANS. FOLLOWING INSTALLATION, PHOTOGRAPHS OF FENCING SHALL BE PROVIDED TO HAWAII STATE HISTORIC PRESERVATION DIVISION (SHPD). FENCING SHALL BE INSPECTED AT A MINIMUM OF ONCE PER WEEK AND SHALL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A PROTECTIVE BUFFER.
24. SEED MIXTURES USED IN HYDROSEEDING OF DISTURBED AREAS SHALL BE COMPOSED OF SEEDS NATIVE TO HAWAII.

PUBLIC HEALTH SAFETY AND CONVENIENCE NOTES

1. CONTRACTOR SHALL AT ALL TIMES OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR, AT THEIR EXPENSE, SHALL MAINTAIN THE PROJECT AND SURROUNDING AREA FREE FROM RUBBISH, DUST, NOISE, EROSION, ETC. ALL WORK SHALL BE DONE IN CONFORMANCE WITH ALL FEDERAL AND STATE MANDATED AIR AND WATER POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE OF HAWAII DEPARTMENT OF HEALTH.
3. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL EXERCISE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, SAFETY AND WELL BEING OF THE PUBLIC.

4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO CHAPTER 46, PUBLIC HEALTH REGULATIONS, DEPARTMENT OF HEALTH, STATE OF HAWAII, "COMMUNITY NOISE CONTROL." IN WHICH MAXIMUM PERMISSIBLE NOISE LEVELS HAVE BEEN ESTABLISHED. IF THE CONSTRUCTION WORK REQUIRES A PERMIT FROM THE DIRECTOR OF HEALTH, THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR THE CONSTRUCTION ACTIVITIES. APPLICATION AND INFORMATION ON VARIANCES ARE AVAILABLE FROM THE ENVIRONMENTAL PROTECTION AND HEALTH SERVICES DIVISION, 1250 PUNCHBOWL ST., HONOLULU, HI 96813 OR BY TELEPHONE (548-6455).



UNDERGROUND UTILITIES NOTES

1. CALL HAWAII ONE CALL CENTER 1-888-423-7287 FOR INFORMATION REGARDING UNDERGROUND UTILITIES PRIOR TO ANY CONSTRUCTION.

EARTHWORK NOTES

1. ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE COUNTY OF MAUI "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" AND "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" EXCEPT AS NOTED BELOW.
2. FILL MATERIAL SHALL BE FREE OF LARGE CLUMPS OF SOIL, LARGE STICKS, STUMPS, BOULDERS, OTHER ORGANIC MATTER, TRASH, DEBRIS AND ANYTHING THAT MAY PREVENT UNIFORM COMPACTION. ALL MATERIAL UNSUITABLE FOR FILL SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DISPOSAL FACILITY AT NO ADDITIONAL COST TO THE OWNER.
3. PRIOR TO PLACING FILL MATERIAL, ENSURE THE EXCAVATED SILT AND EMBANKMENT MATERIALS ARE WELL-MIXED.
4. PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES, DRAIN RESERVOIRS AND ALLOW SILT AND RESERVOIR TO DRY SUCH THAT SILT CAN BE BLENDED WITH FILL MATERIAL TO MEET COMPACTION REQUIREMENTS. MATERIAL THAT IS TOO WET TO MEET COMPACTION REQUIREMENTS SHALL NOT BE USED.
5. PLACE FILL MATERIAL IN MAXIMUM 12" THICK COMPACTED LIFT THICKNESSES. EACH LAYER SHALL BE COMPACTED TO A MINIMUM 95% MAX DENSITY (IN ACCORDANCE WITH THE STANDARD PROCTOR DENSITY ASTM D 698).
6. MAINTAIN THE MOISTURE CONTENT WITHIN 1 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
7. PERFORM AND SUBMIT QC TESTING PER THE TABLE BELOW.

| SUMMARY OF MATERIALS TESTING REQUIREMENTS |   |  |  |
|---|---|--|--|
| TEST METHOD REFERENCE                     | TEST DESCRIPTION  | TEST FREQUENCY   |  |
| ASTM D1550<br>OR<br>ASTM D6938            | DENSITY OF SOIL IN PLACE BY THE SAND CONE METHOD OR STANDARD TEST METHOD FOR IN-PLACE DENSITY AND WATER CONTENT OF SOIL AND SOIL-AGGREGATE BY NUCLEAR METHODS (SHALLOW DEPTH) | FOUR (4) TESTS PER LIFT OR ONE (1) TEST PER 100 CUBIC YARDS  |  |
| ASTM D698                                 | MOISTURE-DENSITY RELATIONS OF SOILS USING 5.5 LB. RAMMER AND 12-INCH DROP   | ONE (1) TEST PER 5,000 CUBIC YARDS AND WHENEVER NECESSARY TO RESOLVE CONSTRUCTION CONTROL PARAMETERS |  |

RIPRAP SPECIFICATIONS

1. RIPRAP SHALL CONSIST OF THE SALVAGED STONE AND CONCRETE RUBBLE FROM THE SITE.
2. INSTALL A TENACATE GEOSYNTHETICS MIMAFI 180N (OR APPROVED EQUAL) GEOTEXTILE UNDER THE PLACED RIP-RAP.
3. AREAS ON WHICH GEOTEXTILE IS TO BE PLACED SHALL BE GRADED, TRIMMED, DRESSED AND PREPARED TO CONFORM TO ELEVATIONS NECESSARY TO ACHIEVE THE FINAL ELEVATIONS SHOWN ON THE DRAWINGS.
4. RIP-RAP (FROM SALVAGED LINING AND GROUTED ROCK SLOPE PROTECTION) TO BE PLACED PER EXTENTS ON PLAN. MINIMUM THICKNESS SHALL BE 24D50 SIZE OR 12", WHICHEVER IS GREATER. MINIMUM RIPRAP D50 = 8".
5. STONE FOR RIPRAP SHALL BE PLACED ON NEW GEOTEXTILE IN SUCH A MANNER AS TO PRODUCE A WELL-GRADED MASS OF ROCK WITH THE MINIMUM PRACTICABLE PERCENTAGE OF VOIDS AND SHALL BE CONSTRUCTED WITHIN THE SPECIFIED TOLERANCES OF THE LINES AND GRADES SHOWN ON THE DRAWINGS OR STAKED IN THE FIELD. PROVIDE AND SET GRADES AT ALL POINTS OF GRADE CHANGE TRANSVERSELY. A TOLERANCE OF 43 INCHES FROM THE THICKNESS SHOWN ON THE DRAWINGS WILL BE ALLOWED IN THE FINISH SURFACE OF THE RIPRAP. THE INTENT OF THESE SPECIFICATIONS IS TO REQUIRE PLACEMENT OF RIPRAP TO THE THICKNESS SHOWN, NO MINUS TOLERANCE WILL BE PERMITTED. RIPRAP WILL BE PLACED TO ITS FULL COURSE THICKNESS AT ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACING THE GEOTEXTILE AND TO MINIMIZE SEGREGATION OF THE RIPRAP. THE DROP HEIGHT OF THE STONES ONTO THE GEOTEXTILE SHALL BE LIMITED TO 1 FOOT. THE LARGE STONES SHALL BE WELL DISTRIBUTED, AND THE ENTIRE MASS OF STONES IN THEIR FINAL POSITION SHALL BE WELL GRADED. THE DESIRED DISTRIBUTION OF THE VARIOUS SIZES OF STONES THROUGHOUT THE MASS SHALL BE OBTAINED BY SELECTIVE LOADING OF MATERIAL AT THE SOURCE AND/OR BY CONTROLLED PLACING OF SUCCESSIVE LOADS DURING THE FINAL PLACING. DUMPING OF STONE AT THE TOP OF SLOPES AND ROLLING OR PUSHING INTO PLACE WILL NOT BE PERMITTED. DRIFTING, MANIPULATING, AND MOVING STONE AT ANY TIME PRIOR TO PLACEMENT BY MEANS OF DOZERS OR OTHER BLADE EQUIPMENT WILL NOT BE PERMITTED. FINISHING OF THE SLOPES SHALL BE ACCOMPLISHED AS THE MATERIAL IS BEING PLACED. THE FINISHED SURFACE SHALL HAVE UNIFORM APPEARANCE OF WELL-GRADED MATERIAL. MAINTAIN THE RIPRAP PROTECTION UNTIL ACCEPTED AND REPLACE ANY MATERIAL DISPLACED BY CONSTRUCTION OPERATIONS.

CLEARING, GRUBBING AND GRADING NOTES

1. ALL EARTH DISTURBANCE WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS AND CHAPTER 20 OF THE MAUI COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE MAUI COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) APPROVES AND ISSUES A GRADING PERMIT.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COSTS INCURRED FOR ANY FINES OR REMEDIAL ACTION REQUIRED BY THE DPW SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL MAINTAIN THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCES. ALL WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1, FUGITIVE DUST.
4. ALL EXCAVATION AND GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL, AND CHAPTER 54, WATER QUALITY STANDARDS.
5. THE CONTRACTOR SHALL PLACE TOPSOIL AND SEED ON ALL SLOPES AND EXPOSED AREAS IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED. MINIMUM DEPTH OF TOPSOIL = 3"
6. SLOPES STEEPER THAN 5:1 SHALL BE SCARIFIED AFTER CLEARING, GRUBBING, STRIPPING AND EXCAVATING BEFORE PLACEMENT OF ANY FILL MATERIALS.
7. THE CONTRACTOR SHALL INFORM THE CONTRACTING OFFICER AND THE DPW OF THE LOCATION OF THE DISPOSAL AND/OR BORROW SITE(S) REQUIRED FOR THIS PROJECT WHEN AN APPLICATION FOR A GRADING PERMIT IS MADE. CONTRACTOR'S OPERATIONS AT THE DISPOSAL AND/OR BORROW SITE(S) MUST COMPLY WITH THE REQUIREMENTS OF THE GRADING ORDINANCE.
8. THE CONTRACTOR SHALL CLEAR AND GRUB ALL VEGETATION BEFORE PLACING FILL ON EMBANKMENT OR NATURAL GROUND SURFACE.
9. ADEQUATE MEASURES SHALL BE PROVIDED TO PREVENT FLOODING AND SOIL EROSION ON ADJACENT PROPERTIES DUE TO PROJECT CONSTRUCTION ACTIVITIES.
10. SHOULD ANY UNANTICIPATED ARCHAEOLOGICAL SITE(S) BE UNCOVERED, ALL WORK SHALL CEASE IN THE IMMEDIATE AREA OF THE ARTIFACT AND THE CONTRACTING OFFICER AND DLNR HISTORIC PRESERVATION DIVISION (908-933-7650) SHALL BE NOTIFIED. NO WORK SHALL RESUME UNTIL CLEARANCE HAS BEEN OBTAINED FROM THE HISTORIC PRESERVATION DIVISION.
11. ALL MATERIAL EXCAVATED DURING CONSTRUCTION ACTIVITIES IS TO BE PLACED BACK AS FILL WITHIN THE EXTENTS AND TO THE GRADES AND CONTOURS SHOWN ON SHEET C-02. THE SITE IS INTENDED TO BALANCE CUT AND FILL QUANTITIES. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ADJUSTMENTS IN GRADING TO PROVIDE A BALANCED EARTHWORK VOLUME. CUT AND FILL GRADE ADJUSTMENTS GREATER THAN APPROXIMATELY 6 INCHES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMPLETING THE WORK. ALL FINAL ADJUSTMENTS SHALL BE DOCUMENTED IN THE RECORD DRAWINGS.

APPROXIMATE CUT VOLUME 8,860 CU YD

APPROXIMATE FILL VOLUME 8,860 CU YD

LEGEND

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- APPROX. CUT DAYLIGHT LINE
- APPROX. TOE OF FILL LINE
- APPROX. LIMITS OF DISTURBANCE LINE
- GRADING BREAK LINE
- FLOW DIRECTION ARROW
- 2:1 SLOPE INDICATOR
- PROPOSED BREACH ARMORING
- EXISTING TARO PATCH (APPROXIMATE)
- PROPOSED STAGING AREA (APPROXIMATE)

|              |                     |            |
|--------------|---------------------|------------|
| REVISION NO. | DESCRIPTION         | DATE       |
| 0            | FOR PERMIT APPROVAL | 10/02/2017 |

3828 North Central Avenue, Suite 1900, Phoenix, AZ 85012-1957  
Phone (602) 553-8871 Fax (602) 553-8816 Web www.gfnl.com

1-866-423-7287

Call Center (toll-free)

|                 |                |
|-----------------|----------------|
| DESIGNED: AL    | DATE: 5/8/30/5 |
| DRAWN: AL       | DATE: OCT 2017 |
| CHECKED: SSV    | DATE: G-04     |
| SCALE: AS NOTED |                |

LEGEND, ABBREVIATIONS & SPECIFICATIONS (3 OF 3)

DATE: 4/30/2018

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE: 4/30/2018

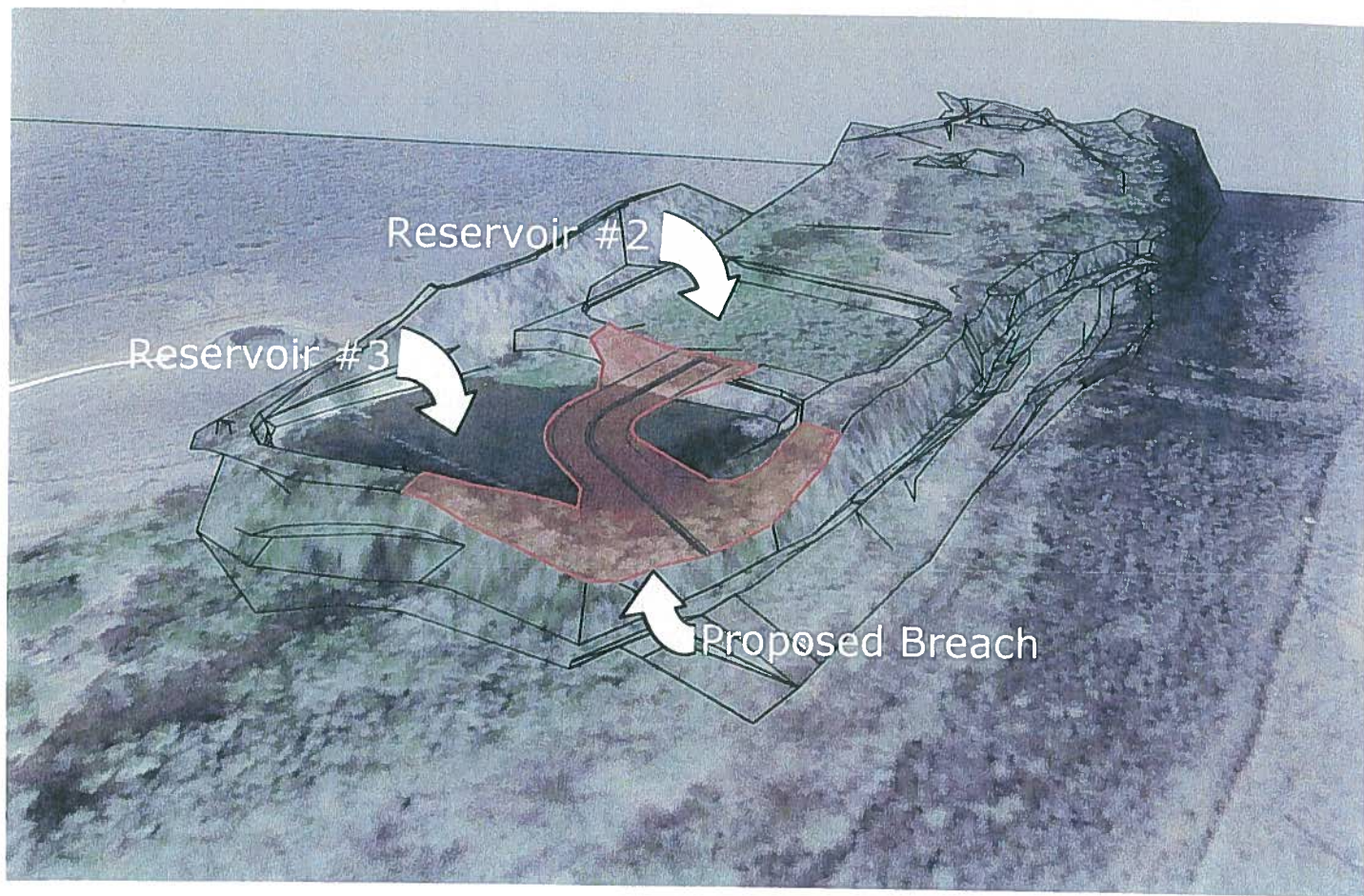
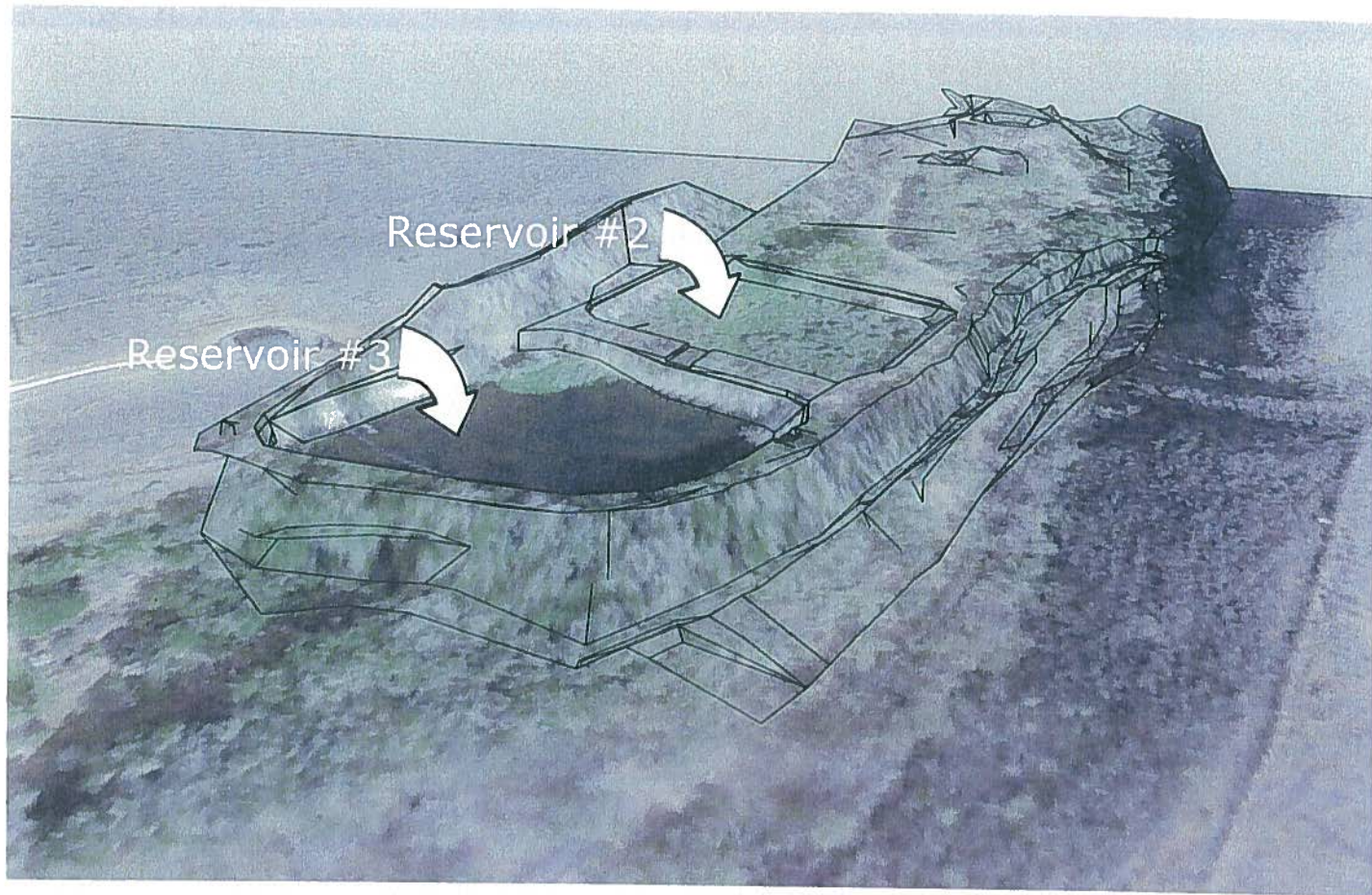
STEWART S. VAUGHN

REGISTERED PROFESSIONAL ENGINEER

NO. 14057-C

HAWAII, U.S.A.





**Ukumehame Reservoirs 2 & 3 Breach**  
Concept



Ukumehame Reservoirs (MA-0140)  
Grouted Rip Rap Upstream Slope in Reservoir #3



Ukumehame (201).JPG

Invalid Position  
Invalid Position

Ukumehame Reservoirs (MA-0140)  
Spillway Channel Entrance in Reservoir #3



Ukumehame (203).JPG

W 156.58711°  
N 20.81013°

12:55:26 PM

Ukumehame Reservoirs (MA-0140)  
Grouted Rip Rap Upstream Slope in Reservoir #2



Ukumehame (202).JPG

W 156.58710°  
N 20.81013°

12:55:20 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Reservoir #2 Overflow Channel to Reservoir #3



Ukumehame (204).JPG

W 156.58728°

12:57:09 PM



Ukumehame Reservoirs (MA-0140)  
Grouted Rip Rap Defects in Overflow Channel



W 156.58730°  
N 20.81019°

Ukumehame (205).JPG

12:57:16 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Extensive Water Plant Life in Reservoir #3



W 156.58731°  
N 20.81019°

Ukumehame (207).JPG

12:57:27 PM

Ukumehame Reservoirs (MA-0140)  
Residual Pool in Reservoir #3 Kept for Fish

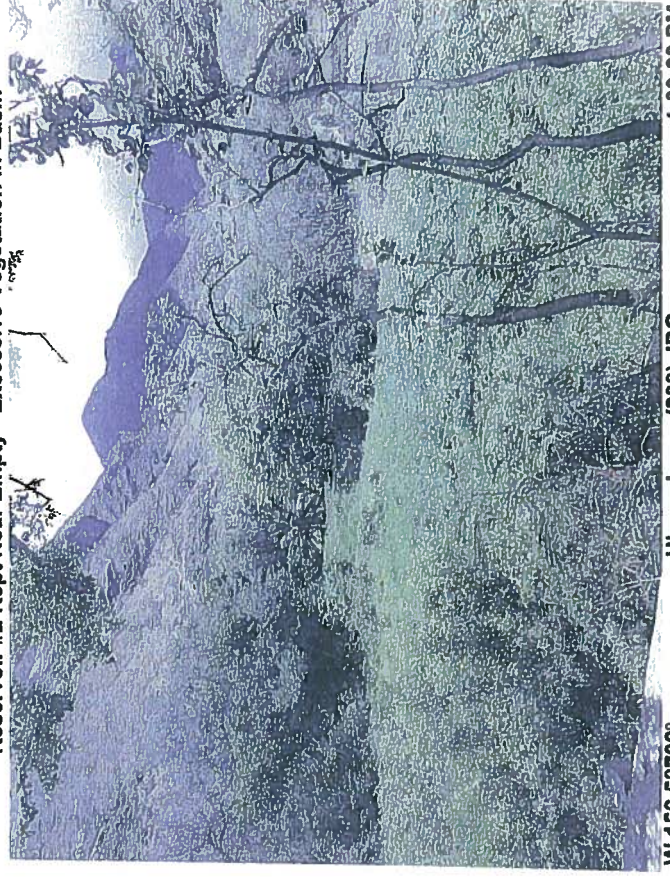


W 156.58731°  
N 20.81019°

Ukumehame (206).JPG

12:57:23 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Reservoir #2 Kept Near Empty - Excessive Vegetation in Basin



W 156.58732°

Ukumehame (208).JPG

1:00:28 PM



Ukumehame Reservoirs (MA-0140)

Hundreds of Trees on the Dike Between the Two Reservoir Basins



W 156.58734°  
N 20.81022°

Ukumehame (209).JPG

1:03:18 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)

Reservoir #2 - Excessive Vegetation in Reservoir Basin



W 156.58715°  
N 20.81086°

Ukumehame (211).JPG

1:07:48 PM

Ukumehame Reservoirs (MA-0140)

Dam Crest Serves as an Access Road



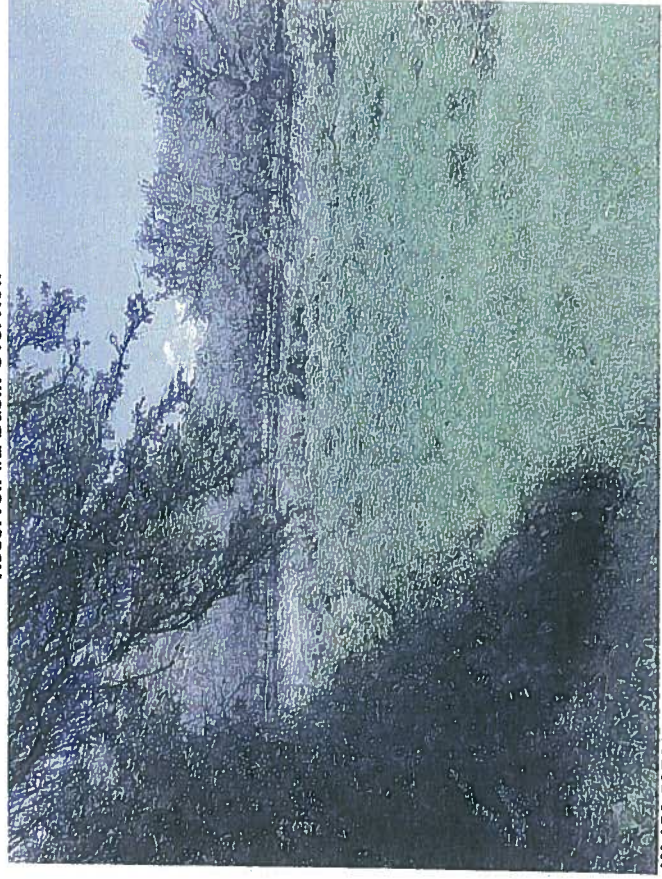
W 156.58683°  
N 20.81037°

Ukumehame (210).JPG

1:06:22 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)

Reservoir #2 Basin Overview



W 156.58729°

Ukumehame (212).JPG

1:08:13 PM



Ukumehame Reservoirs (MA-0140)

5 Inch PVC Pipe From Taro Patch Flows to Reservoir #2



W 156.58730°  
N 20.81084°

Ukumehame (213).JPG

1:08:19 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)

Flow Entering the Taro Patch Above reservoir #2



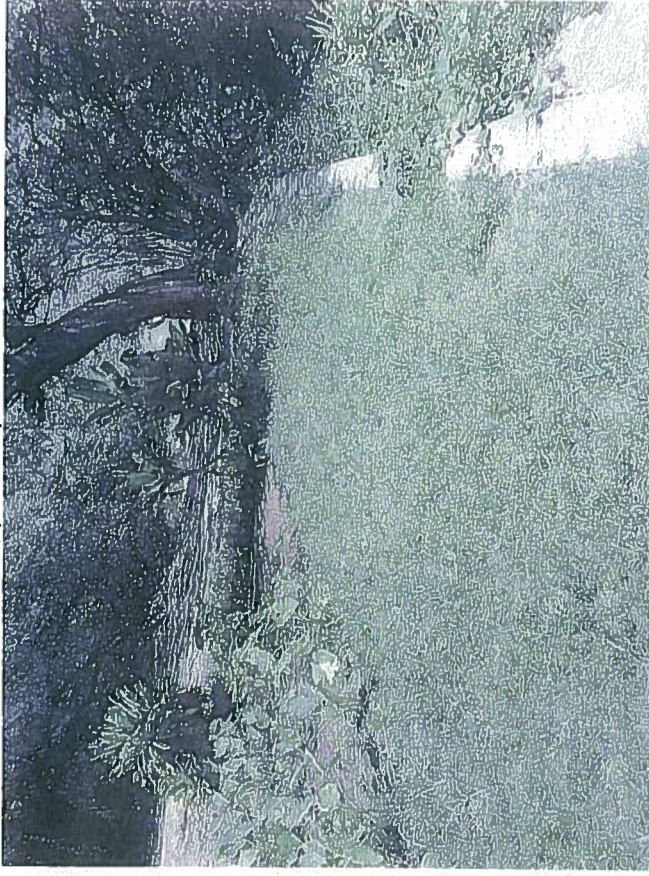
W 156.58729°  
N 20.81121°

Ukumehame (215).JPG

1:14:28 PM

Ukumehame Reservoirs (MA-0140)

Taro Patch (Lo'i Kalo) Above Reservoir #2



W 156.58734°  
N 20.81084°

Ukumehame (214).JPG

1:08:31 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)

Flow Dropped Down From 8 Inch HDPE Pipeline



W 156.58753°

Ukumehame (216).JPG

1:15:13 PM



Ukumehame Reservoirs (MA-0140)  
8 Inch HDPE Pipeline - 2 Inch HDPE Line Tees Off



W 156.58760°  
N 20.81134°

Ukumehame (217).JPG

1:15:29 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Dam Crest - Hundreds of Trees on Shoulders



W 156.58703°  
N 20.80993°

Ukumehame (219).JPG

1:21:32 PM

Ukumehame Reservoirs (MA-0140)  
Lo'i Kalo Above Reservoir #2

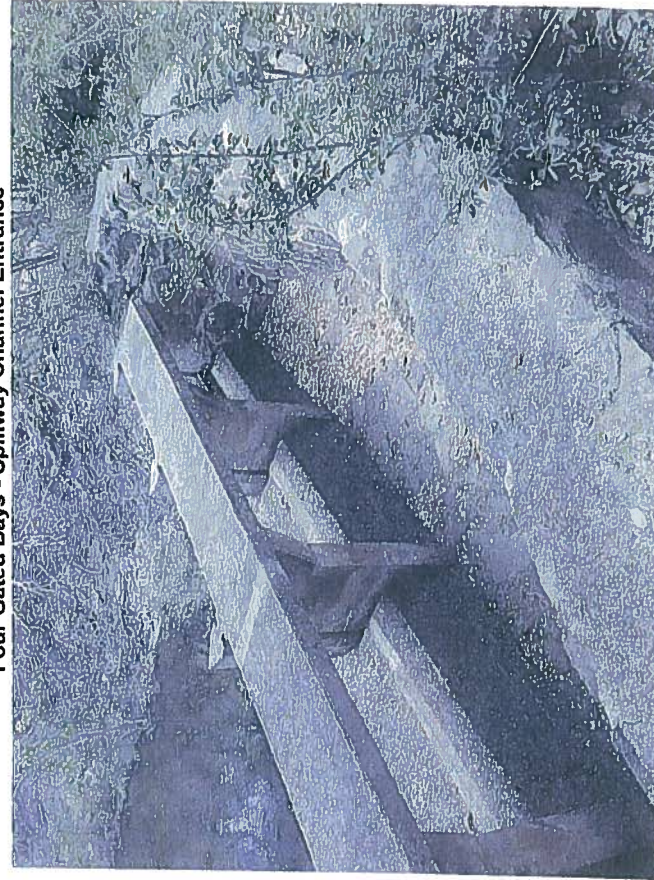


W 156.58722°  
N 20.81119°

Ukumehame (218).JPG

1:18:23 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Four Gated Bays - Spillway Channel Entrance



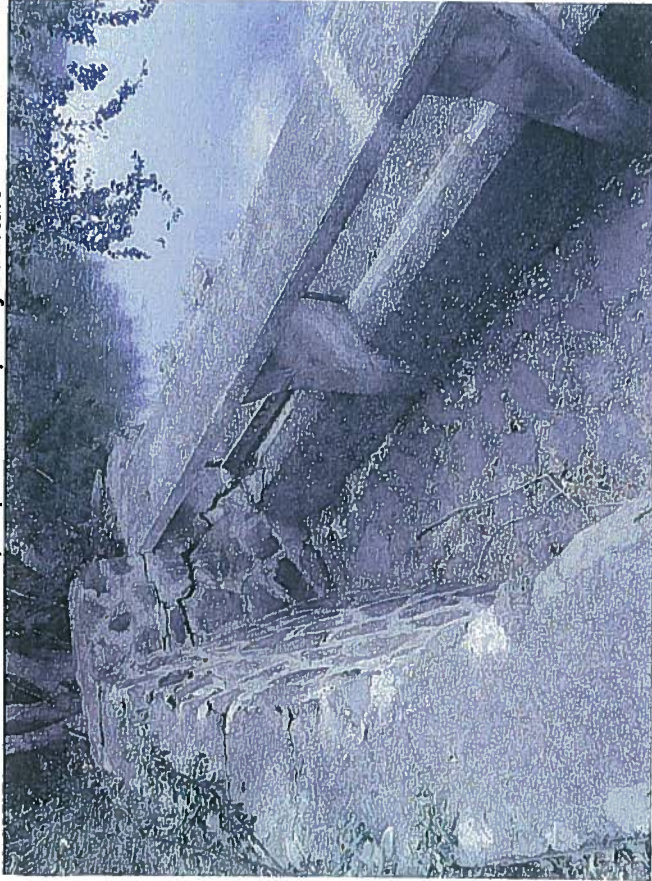
W 156.58711°

Ukumehame (220).JPG

1:22:02 PM



Ukumehame Reservoirs (MA-0140)  
Grouted Rip Rap Defect in Spillway Structure



W 156.58708°  
N 20.80989°

Ukumehame (221).JPG

1:22:14 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Grouted Rip Rap Downstream Slope Below Spillway



W 156.58773°  
N 20.80955°

Ukumehame (223).JPG

1:27:29 PM

Ukumehame Reservoirs (MA-0140)  
Excessive Vegetation on Downstream Slope of Reservoir #3



W 156.58771°

Ukumehame (224).JPG

1:27:34 PM



Ukumehame Reservoirs (MA-0140)  
Twin 24 inch Pipes Convey Spillway Flows to Stream

W 156.58712°  
N 20.80984°

Ukumehame (222).JPG

1:22:33 PM  
29/Jun/15



Ukumehame Reservoirs (MA-0140)  
Low Level Outlet Operator in Reservoir #3



W 156.58799°  
N 20.80963°  
Ukumehame (225).JPG  
1:28:44 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Dead Woody Debris in Reservoir #3 Could Hinder Spillway Flows



W 156.58705°  
N 20.81001°  
Ukumehame (227).JPG  
1:35:42 PM  
29/Jun/15

Ukumehame Reservoirs (MA-0140)  
Perilous Access to Outlet Operator - Missing Hand Rail



W 156.58806°  
N 20.80989°  
Ukumehame (226).JPG  
1:30:14 PM  
29/Jun/15





---

**Re: Ukumehame Reservoir Breach RFD**

---

**Rebecca.R.Alakai@hawaii.gov** <Rebecca.R.Alakai@hawaii.gov>  
To: "Richardson, Jacob" <jrichardson@gfnet.com>

Tue, Aug 26, 2014 at 12:48 PM

RFD.4038.6

Jacob M. Richardson  
Design Engineer  
Gannett Fleming, Inc.  
4722 N. 24<sup>th</sup> Street, Suite 250  
Phoenix, AZ 85016  
Via email

Request for Determination  
Ukumehame Reservoir 2 and 3 Breach  
Ukumehame Stream, Maui, TMK (2) 2-4-008:002

Dear Mr. Richardson:

We are responding to your August 19, 2014, request for determination regarding the subject reservoir breach and constructing a channel through the existing reservoir area. Construction activities will include dewatering the reservoirs using best management methods for capturing sediment before the water is discharged into the Ukumehame gulch.

Pursuant to §174C-71(3)(A), Hawaii Revised Statutes, the Commission on Water Resource Management "shall require persons to obtain a permit from the Commission prior to undertaking a stream channel alteration; provided that routine streambed and drainageway maintenance activities are exempt from obtaining a permit. The Commission's Stream Protection and Management Branch, has the responsibility to protect stream channels from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses in the State under the authorization of the State Water Code, HRS Chapter 174C, and Hawaii Administrative Rules Chapter 13-169 (Protection of Instream Uses of Water).

Based on the information that you provided, a Stream Channel Alteration Permit will not be required because project activities are outside of the stream channel and instream uses will not be affected.

Please be advised that the project may require other agency approvals regarding wetlands, water quality, grading, stockpiling, and floodways. This letter should not be used for other regulatory jurisdictions or used to imply compliance with other federal, state, or county rules. Work performed without appropriate permits or authorizations may be subject to fines and/or remedial actions.

If you have any questions, contact Rebecca Alakai at 587-0266, or [rebecca.r.alakai@hawaii.gov](mailto:rebecca.r.alakai@hawaii.gov).

Rebecca Alakai  
Planner, Stream Protection and Management Branch  
Commission on Water Resource Management  
Dept. of Land and Natural Resources  
1151 Punchbowl St, Rm 227, Honolulu, HI 96813  
Ph: 587-0266 Fax: 587-0219  
<http://dlnr.hawaii.gov/cwrm/>

9/3/2014

Gannett Fleming Mail - Re: Ukumehame Reservoir Breach RFD



## CHAPTER 343 ANALYSIS

Project Name: Ukumehame Reservoirs

Reviewer: Jimmy Leung

Date of Review: 27 September 2017

### TRIGGERS (HRS §343-5(a))

Is there an "action" that triggers the need for an EA?

#### Action

An "action" is a program or project:

☐ Initiated by an agency

☒ Initiated by an "applicant"

Any person who, pursuant to statute, ordinance, or rule, officially requests "approval" for a proposed action (discretionary consent required from an agency prior to actual implementation of an action, distinguished from a ministerial consent)

☐ Statute

☐ Ordinance

☐ Rule

#### Triggers

Yes No

☐ ☒ Use of state or county lands or funds

☐ ☒ Use of conservation district lands

☐ ☒ Use within shoreline setback area

☒ ☐ Use of historic site designated on the National or Hawaii registers

☐ ☒ Use of land in the Waikiki Special District

☐ ☒ Amendment to county general plan which would result in designations other than agriculture, conservation, or preservation unless initiated by a county

☐ ☒ Reclassification of conservation lands by the Land Use Commission

☐ ☒ Construction or modification of helicopter facilities that may affect conservation district lands, a shoreline setback area, or a historic site

☐ ☒ Wastewater facilities, waste-to-energy facility, landfill, oil refinery, or power-generating facility

#### Triggers summary:

Is there a trigger? Yes ☒ No ☐

If Yes, **Go to Exemptions**

If No, Environmental Assessment is NOT required. **Go to Summary.**

### EXEMPTIONS

Two sources of exemptions: exemption lists or exemptions contained in HAR §11-200-8(a)

#### 1. Exemption Lists

☐ Division exemption lists

☐ Department-wide exemption list

Explain (which exemption list, which exemption, how it applies):

## CHAPTER 343 ANALYSIS

---

---

---

---

---

### 2. HAR §11-200-8(a) exemptions

- \_\_\_\_\_ Operations, repairs, or maintenance of existing structures, facilities, equipment, or topographical features, involving *negligible or no expansion or change of use* beyond that previously existing
- \_\_\_\_\_ Replacement or reconstruction of existing structures and facilities where the new structure will be located generally on the same site and will have *substantially the same purpose, capacity, density, height, and dimensions* as the structure replaced
- \_\_\_\_\_ Construction and location of a single, *new, small facilities* or structures and the alteration and modification of the same and installation of new, small, equipment and facilities and the alteration and modification of same, including, but not limited to:
  - (a) *Single family residences less than 3,500 square feet* not in conjunction with the building of two or more such units;
  - (b) Multi-unit structures designed for *not more than four dwelling units* if not in conjunction with the building of two or more such structures;
  - (c) Stores, offices, and restaurants designed for total occupant load of *twenty persons or less* per structure, if not in conjunction with the building of two or more such structures; and
  - (d) Water, sewage, electrical, gas, telephone, and other essential public utility services extensions *to serve such structures* or facilities; accessory or appurtenant structures including garages, carports, patios, swimming pools, and fences; and acquisition of utility easements
- \_\_\_\_\_ *Minor alterations* in the conditions of land, water, or vegetation
- \_\_\_\_\_ Basic data collection, research, experimental management, and resource evaluation activities that *do not result in a serious or major disturbance* to an environmental resource
- \_\_\_\_\_ Construction or placement of *minor structures accessory* to existing facilities
- \_\_\_\_\_ *Interior alterations* involving things such as partitions, plumbing, and electrical conveyances

## CHAPTER 343 ANALYSIS

- ☒ Demolition of structures, *except* those structures located on any *historic site* as designated on the National or Hawaii registers
- ☐ Zoning variances *except shoreline* set-back variances
- ☐ Continuing administrative activities including, but not limited to purchase of supplies and personnel related actions; and
- ☐ Acquisition of land and existing structures, including single or multi-unit dwelling units, for the provision of *affordable housing*, involving *no material change of use* beyond that previously existing, and for which the *legislature has appropriated* or otherwise authorized *funding*

Explain (how the exemption indicated above applies):

Initial review shows that there is a historical site on the property. Upon further review by SHPD, it was "SHPD's determination that no historic properties affected for the proposed project." (See Exhibit 5)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Exemptions summary:

Does the Project qualify for an exemption? Yes ☒ No ☐

If Yes, Exemption noted above, No Environmental Assessment required

If No, Project does not qualify for exemption and requires an Environmental Assessment

## CUMULATIVE IMPACT

Exemptions are inapplicable when the cumulative impact of planned successive actions in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.

## SUMMARY

Is Environmental Assessment required?

Yes \_\_\_\_\_

No ☒

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
KAKUHIHEWA BUILDING  
601 KAMOKILA BLVD, STE 555  
KAPOLEI, HAWAII 96707

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

October 3, 2017

Edwin Matsuda, P.E., CFM  
Flood Control and Dam Safety Section Head  
State of Hawai'i, DLNR  
[Edwin.Y.Matsuda@hawaii.gov](mailto:Edwin.Y.Matsuda@hawaii.gov)

IN REPLY REFER TO:  
Log No. 2016.01884  
Doc No. 1710SL01  
Archaeology

Dear Mr. Matsuda,

SUBJECT: **Chapter 6E-42 Historic Preservation Review – REVISED  
Ukumehame Reservoir MA-0140 Dam Safety Permit No. 77 – Dam Removal  
Ukumehame Ahupaua'a, District of Lahaina, Maui Island  
TMK: (2) 4-8-002:015, 017, 027, 064, 066, and 118**

This letter clarifies the permit stipulations in our earlier correspondence (August 23, 2017; Log No. 2016.01884, Doc. No. 1708MBF02) for the proposed Ukumehame Reservoir MA-0140 Dam Safety Permit No. 77 project, identified as removal of the Ukumehame Reservoirs 2 and 3 (State ID MA-0140).

Our earlier letter provides the following summary. The dam safety permitting review has been completed and the Department of Land and Natural Resources (DLNR) Engineering Division is awaiting State Historic Preservation Division (SHPD) review and acceptance of the proposed plan prior to submitting the permit for final approval. This SHPD letter addresses three submittals related to this permit provided by Gannett Fleming, Inc., on behalf of the landowner: Log No. 2016.01884 (received 8/3/2016) Log No. 2016.02200 (received 9/12/2016) and Log No. 2017.01457 (received 7/10/2017).

SHPD received additional information regarding this project via email on August 23, 2017 (Stewart S. Vaghti [Gannett Fleming, Inc.] to Susan Lebo [SHPD]). This correspondence included a delegation letter from West Maui Investors, LLC (property owner) to Gannett Fleming, Inc., authorizing them to submit the historic preservation documents and requests to the SHPD on their behalf. The additional information includes clarification that the proposed project scope does not involve a removal of the reservoir/dam structure, but rather the construction of breach sections with a portion of the existing embankment sections such that water can no longer be impounded, thereby removing the safety risk currently posed by the reservoirs. Also, Gannett Fleming will "add a requirement that site photos be sent to SHPD documenting the installation of the temporary protective measures (fencing) [around several archaeological preserves] prior to initiating other construction activities. This requirement will be added to the plans or specifications." Additionally, Gannett Fleming, Inc. recommends that DLNR Dam Safety include this requirement in their permit conditions.

Reservoirs 2 and 3 are located at the downstream end of the Ukumehame Gulch, approximately 8.5 miles southeast of Lahaina. Both reservoirs are currently classified by the DLNR as "high hazard," due to water seepage that could worsen and result in failure of the dams. The property owner is required to address these dam safety concerns as determined by the DLNR. Since 2009, these reservoirs have been managed on an interim basis to avoid and minimize the hazard potential. Receipt of the DLNR Dam Safety permit will allow the property owner to remove the dam safety risks.

An archaeological inventory survey (Devereaux et al. 1999) was conducted in advance of the proposed Ukumehame Subdivision. This survey included a pedestrian survey and subsurface testing of the 440 acres. The survey newly

identified 17 sites, of which 3 were recommended for no further work (Sites 50-50-08-3167, 4439, and 4440); a historic cattle wall (Site 50-50-08-3167) previously identified during the Mā'alea to Lahaina transmission line inventory survey (Robins et al. 1994) also was recommended for no further work. Of the newly identified sites, 14 were recommended for preservation (Sites 50-50-08-02, 03, 3165, 3184, 4367, 4381, 4438, 4451, 4452, 4454, 4455, 4456, 4494, and 4828). The SHPD accepted the archaeological inventory survey (AIS) report in a letter dated August 30, 1999 (Log No. 24021, Doc. No. 9908RC71). The agreed-upon mitigation included submittal of a burial treatment plan for 5 of the preservation sites: Site 50-50-08-02, Hiki'i Heiau; Site 50-50-08-03, Ukumehame Heiau; Site 50-50-08-4494, a cemetery; and Site 50-50-08-4828, a burial site; and a preservation plan for 10 of the preservation sites; Site 50-50-08-3184 was included in both plans. The SHPD reported that the Maui/Lāna'i Islands Burial Council voted unanimously to approve in-place preservation of these sites (January 15, 2003; Log No. 3151, Doc. No. 0301KK01).

The ten sites included in the preservation plan are: Site 50-50-08-3165, four enclosures; Site 50-50-08-3184, five enclosures; Site 50-50-08-4367, three terraces; Site 50-50-08-4381, twenty-two petroglyphs; Site 50-50-08-4438, irrigation ditch; Site 50-50-08-4451, habitation; Site 50-50-08-4452, twenty-four terraces; Site 50-50-08-4454, rock shelter with enclosures; Site 50-50-08-4455, nine terraces; and Site 50-50-08-4456, platform, terrace, and an associated petroglyph. The preservation plan for these sites was reviewed and accepted by SHPD (October 2, 2000; Log No. 26200, Doc No. 0008MK12).

The only historic property identified within the current project area is Site 50-50-08-4438, an irrigation ditch slated for preservation, but still in operational use by residents living in the Ukumehame Gulch. The dam removal proposal follows protective measures as stipulated in the preservation plan, which will include installation of orange construction fencing to identify a 10-foot buffer zone from the ditch.

In 2003 (Log No. 2003.2074, Doc. No. 0310CD37), SHPD reviewed the preliminary plat for Phase II (File No.:4.876[County/DSA) and requested a detailed map be prepared showing the established buffer zones, and with all preservation sites plotted clearly on the submitted plans by a licensed surveyor. In a letter dated December 24, 2003, the SHPD indicates that in meeting held on September 17, 2003, "it was agreed that monitoring was recommended during construction activities, especially on lots adjacent to site buffer areas and LCAs, as artifactual material and cultural deposits have been identified in other agricultural subdivisions." Additionally, the requested map was received, as was a draft archaeological monitoring plan which was reviewed and accepted (December 24, 2003; Log No. 2003.2638, Doc. No. 0312MK16).

Archaeological monitoring newly identified a historic property consisting of a multi-component complex comprised of five features (site 50-50-08-6259). Testing was conducted in Features 1 and 4. The site was interpreted as likely pre-Contact in age; not confirmed by radiocarbon dating. The identified features were a rectangular enclosure (Feature 1); a C-shape abutting two large boulders (Feature 2); a rock- and earth-faced terrace (Feature 3); a similar terrace (Feature 4) with scant shell midden remains present; and a third terrace encircling a small level area south of Feature 2 (Feature 5). In reviewing the letter report documenting this inadvertent find, the SHPD indicated that the site is significant under Criteria d and e, and further discussion is appropriate regarding whether these features should be considered a separate site or be incorporated as components of previously identified Site 50-50-08-5969 (May 21, 2007; No Log No., Doc. No. 0704MK05).

Subsequent studies include an Addendum AIS (Dega 2006), a preservation plan for Sites 50-50-08-5968 and 50-50-08-5969 (Shefcheck and Dega 2006), and a preservation plan for Site 50-50-08-4438 (Dagher and Dega 2010).

The proposed dam removal plans were discussed with the DLNR's Engineering Division. Community members were also consulted. On August 1, 2017, a site visit was conducted by Dr. Matthew Barker Fariss, the SHPD Lead Archaeologist on Maui, to determine the potential for direct and/or indirect impacts on the historic properties listed above.

Based on available information, SHPD's determination is **no historic properties affected** for the proposed project. SHPD stipulates the following:

- (1) Gannett Fleming Inc., will ensure photos are submitted to SHPD documenting the installation of the temporary protective measures (fencing) along the archaeological preservation buffers identified as Buffer Areas 5 and 6 (as recorded on final plat, Subdivision File No. 4.876) prior to initiating other construction activities. Also, this requirement will be added to the plans or specifications;

Edwin Matsuda  
October 3, 2017  
Page 3

- (2) DLNR Dam Safety includes Stipulation # 1 in their permit conditions; and
- (3) The following is attached to the permit: *In the event that historic resources; including human skeletal remains, structural remains, cultural deposits, or sand deposits are identified during construction activities, cease work in the vicinity of the find, protect the find from any disturbance, and contact the State Historic Preservation Division at (808) 243-1285.*

**The permit issuance process may continue.**

Please contact Dr. Susan A. Lebo, Archaeology Branch Chief, at (808) 692-8019 or at [Susan.A.Lebo@hawaii.gov](mailto:Susan.A.Lebo@hawaii.gov) for any questions regarding this letter.

Aloha,



Alan S. Downer, PhD.  
Administrator, State Historic Preservation Division  
Deputy State Historic Preservation Officer

cc: Andy Lynch, P.E.  
Sr. Project Engineer  
Gannett Fleming, Inc.  
[alynch@GFNET.com](mailto:alynch@GFNET.com)

Stewart S. Vaghti, P.E., CFM  
Sr. Project Manager  
Gannett Fleming, Inc.  
[svaght@GFNET.com](mailto:svaght@GFNET.com)

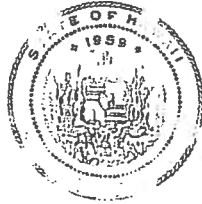
West Maui Investors, LLC  
468 N. Camden Drive, Suite 300  
Beverly Hills, CA 90210

## Ukumehame Reservoirs

### Agency Consultation:

| Agency                                   | Date Sent | Date Returned | No Comments | Comments | No Reply |
|--|-----------|---------------|-------------|----------|----------|
| Division of Aquatic Resources            | 7/2/16    | 8/16/16       |             | X        |          |
| Commission on Water Resources Management | 7/2/16    |               |             | X        |          |
| Division of Forestry and Wildlife        | 7/2/16    |               |             |          | X        |
| Historic Preservation Division           | 7/2/16    | 8/23/17       |             | X        |          |
| Land Division                            | 7/2/16    | 8/30/16       | X           |          |          |
| Office of Conservation and Coastal Lands | 7/2/16    | 8/11/16       | X           |          |          |
| Department of Agriculture                | 7/2/16    |               |             |          | X        |
| Department of Agriculture – ADC          | 7/2/16    |               |             |          | X        |
| County of Maui – NFIP                    | 7/2/16    |               |             |          | X        |
| Hawaii EMA                               | 7/2/16    | 8/22/16       | X           |          |          |
| Maui Civil Defense                       | 8/26/16   |               |             |          | X        |

DAVID Y. I. K.  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION  
POST OFFICE BOX 373  
HONOLULU, HAWAII 96809

JUL 27 2016

RECEIVED  
AUG - 2 2016

SUZANNE D. CASE  
CHIEF, PERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

DELOA K. LUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
DIVISION  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

TO:

| TO:                                       | TO:                              |
|---|----------------------------------|
| X Division of Aquatic Resources           | X Department of Agriculture      |
| X Commission on Water Resource Management | X Department of Agriculture-ADC  |
| X Division of Forestry & Wildlife         | County of Kauai - NFIP           |
| X Historic Preservation Division          | City & County of Honolulu - NFIP |
| X Land Division                           | X County of Maui - NFIP          |
| X Office of Conservation & Coastal Lands  | County of Hawaii - NFIP          |
|   | X HEMA                           |
|   | X Hawaii Civil Defense           |

FROM: Carty Chang, Chief Engineer

SUBJECT: Oluiahine Reservoir (File #149)  
Dam Safety Permit No. 77  
Dam Removal

LOCATION: Maui, TM #: (2) 4-8-002:015, 017, 027, 064, 066, 118

APPLICANT: Matthew S. Weber, General Engineering

Transmitted for your review and information are the attached documents on the subject Dam Safety Permit application.

1. Dam Safety Permit Application
2. Plan set
3. Data sheet

Please return to our office a signed copy of this transmittal with one of the choices below checked along with any comments by August 31, 2016. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Jimmy Leung of my staff at (808) 587-0238 or by email. jimmy.m.leung@hawaii.gov.

- ( ) We have no comments  
(X) Comments are attached

Signed: Bruce S. Anderson

Print name: Bruce S. Anderson, Dam Administrator

Date: Aug 16, 2016

16 AUG 17 AM 10:42 ENGINEERING



DAVID Y. IGE  
GOVERNOR OF  
HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

August 15, 2016

MEMORANDUM:

A handwritten signature in dark ink, appearing to be "R. Hau", is written above the "FROM:" line.

TO: Bruce S. Anderson, Ph.D.  
Administrator, DAR

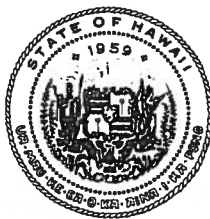
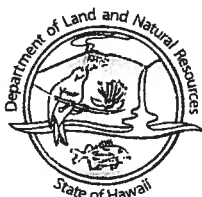
FROM: A handwritten signature in dark ink, appearing to be "Skippy Hau", is written above the name "Skippy Hau".  
Skippy Hau  
Aquatic Biologist

SUBJECT: Comments on Ukumehame Reservoir (MA-0140)  
Dam Safety Permit No. 77  
Dam Removal (DAR5351)

The removal of Ukumehame Reservoir Nos. 2 & 3 will remove the possibility of dam breach and improve safety for downstream locations. It appears that the auwai ditch will still be maintained for existing users.

The return of flow to Ukumehame Stream continues to maintain post larvae recruitment of native stream animals including o'opu (fishes), opae (shrimp) and hihiwai (snail). Recently, I stopped by to check the mouth after we closed the beach after a recent shark incident. The healthy numbers of post larvae fishes was nice to confirm.

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION  
POST OFFICE BOX 373  
HONOLULU, HAWAII 96809

JUL 27 2016

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

TO:

|   | DLNR agencies                           |   | Other Agencies                   |
|---|---|---|----------------------------------|
| X | Division of Aquatic Resources           | X | Department of Agriculture        |
| X | Commission on Water Resource Management | X | Department of Agriculture-ADC    |
| X | Division of Forestry & Wildlife         |   | County of Kauai - NFIP           |
| X | Historic Preservation Division          |   | City & County of Honolulu - NFIP |
| X | Land Division                           | X | County of Maui - NFIP            |
| X | Office of Conservation & Coastal Lands  |   | County of Hawaii - NFIP          |
|   |   | X | HI EMA                           |
|   |   | X | Hawaii Civil Defense             |

FROM: Carty Chang, Chief Engineer

SUBJECT: Ukumehame Reservoir (MA-0140)  
Dam Safety Permit No. 77  
Dam Removal

LOCATION: Maui, TMK: (2) 4-8-002:015, 017, 027, 064, 066, 118

APPLICANT: Matthew S. Balven, Gannett Fleming


Transmitted for your review and information are the attached documents on the subject Dam Safety Permit application.

1. Dam Safety Permit Application
2. Plan set
3. Data sheet

Please return to our office a signed copy of this transmittal with one of the choices below checked along with any comments by **August 31, 2016**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Jimmy Leung of my staff at (808) 587-0238 or by email: jimmy.m.leung@hawaii.gov.

- ( x ) We have no comments  
( ) Comments are attached

Above the ordinary high water  
mark, not CWRM's jurisdiction

Signed:   
Print name: Jeffrey T. Pearson, P.E.

Date: October 3, 2017

RFD. 4475.6/14168 J

DAVID Y. IGE  
GOVERNOR OF HAWAII



SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE  
MANAGEMENT

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
LAND DIVISION

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

August 30, 2016

State of Hawaii  
Department of Land and Natural Resources  
Engineering Division  
Attention: Mr. Carty Chang, Chief Engineer  
P.O. Box 373  
Honolulu, Hawaii 96809

Dear Mr. Chang:

SUBJECT: Ukumehama Reservoir (MA-0140); Dam Safety Permit No. 77  
Dam Removal

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Land Division's Maui District for their review and comments.

At this time, the Land Division's Maui District has no comments to offer on the subject matter. If you have any questions, please feel free to call Daniel Ornellas at (808) 984-8117. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to be "Russell Y. Tsuji".

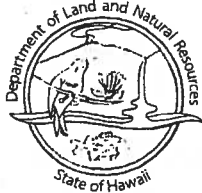
Russell Y. Tsuji  
Land Administrator

cc: Central Files

16 AUG 30 PM 10:45 EST

M: -17-22

DAVID Y. IGE  
GOVERNOR OF HAWAII



REC'D  
1070 CCLER 114  
APR 03 STALLA DS

2016 JUL 28 A 3:01

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
POST OFFICE BOX 373  
HONOLULU, HAWAII 96809

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
  
KEKOA KALUHIWA  
FIRST DEPUTY  
  
JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER  
  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

JUL 27 2016

TO: FROM:

| DLNR agencies                             | Other Agencies                   |
|---|----------------------------------|
| X Division of Aquatic Resources           | X Department of Agriculture      |
| X Commission on Water Resource Management | X Department of Agriculture-ADC  |
| X Division of Forestry & Wildlife         | County of Kauai - NFIP           |
| X Historic Preservation Division          | City & County of Honolulu - NFIP |
| X Land Division                           | X County of Maui - NFIP          |
| X Office of Conservation & Coastal Lands  | County of Hawaii - NFIP          |
|   | X HI EMA                         |
|   | X Hawaii Civil Defense           |

TO: FROM: Carty Chang, Chief Engineer

SUBJECT: Ukumehame Reservoir (MA-0140)  
Dam Safety Permit No. 77  
Dam Removal

LOCATION: Maui, TMK: (2) 4-8-002:015, 017, 027, 064, 066, 118

APPLICANT: Matthew S. Balven, Gannett Fleming

Transmitted for your review and information are the attached documents on the subject Dam Safety Permit application.

1. Dam Safety Permit Application
2. Plan set
3. Data sheet

Please return to our office a signed copy of this transmittal with one of the choices below checked along with any comments by **August 31, 2016**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Jimmy Leung of my staff at (808) 587-0238 or by email: jimmy.m.leung@hawaii.gov.

- ☒ We have no comments  
☐ Comments are attached

NOT IN  
CONSERVATION

Signed: [Signature]  
Print name: Jimmy Leung  
Date: 8.11.16

16 AUG 2016 152 ENGINEERING

DAVID Y. IGE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION  
POST OFFICE BOX 373  
HONOLULU, HAWAII 96809

JUL 27 2016

SUZANNE D. CASE  
CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

KENO KALUHIWA  
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
LAND DIVISION  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

TO:

| DLNR agencies                             | Other Agencies                   |
|---|----------------------------------|
| X Division of Aquatic Resources           | X Department of Agriculture      |
| X Commission on Water Resource Management | X Department of Agriculture-ADC  |
| X Division of Forestry & Wildlife         | County of Kauai - NFIP           |
| X Historic Preservation Division          | City & County of Honolulu - NFIP |
| X Land Division                           | X County of Maui - NFIP          |
| X Office of Conservation & Coastal Lands  | County of Hawaii - NFIP          |
|   | X HIEMA                          |
|   | X Hawaii Civil Defense           |

FROM: Carty Chang, Chief Engineer

SUBJECT: Ukumehame Reservoir (MA-0140)  
Dam Safety Permit No. 77  
Dam Removal

LOCATION: Maui, TMK: (2) 4-8-002:015, 017, 027, 064, 066, 118

APPLICANT: Matthew S. Balven, Gannett Fleming

Transmitted for your review and information are the attached documents on the subject Dam Safety Permit application.

1. Dam Safety Permit Application
2. Plan set
3. Data sheet

Please return to our office a signed copy of this transmittal with one of the choices below checked along with any comments by **August 31, 2016**. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Jimmy Leung of my staff at (808) 587-0238 or by email: jimmy.m.leung@hawaii.gov.

- (X) We have no comments  
( ) Comments are attached

Signed:

Print name: Vern T. Miyagi

Date: August 22, 2016

## **DAM SAFETY PERMIT GENERAL CONDITIONS**

### **APPROVAL OF PLANS AND SPECIFICATIONS FOR DAM AND RESERVOIR CONSTRUCTION, ENLARGEMENT, REPAIR, ALTERATION OR REMOVAL**

The following General Conditions shall be adhered to for all Dam Safety permits unless otherwise authorized in writing.

1. Actual construction, enlargement, repair, alteration or removal shall be completed within 5 years of issuance of the permit application approval unless an extension authorized in writing by the Board is issued.
2. Prior to the start of work the owner or applicant shall provide a construction engineer to ensure compliance with the approved plans and specifications and who shall have ultimate responsibility for the supervision of all inspection tasks. The construction engineer may assign some inspection tasks to a duly authorized agent under the construction engineer's supervision. The engineer shall be licensed in the State of Hawaii.
3. The construction engineer shall maintain a record of construction that at a minimum, shall include, daily activity, and progress reports, all test results pertaining to construction; photographs sufficient to provide a record of foundation conditions and various stages of the construction through completion, all geologic information obtained; and construction problems and remedies.
4. A construction quality assurance plan shall be prepared and submitted to the Department for approval prior to the start of construction, which details the minimum requirements of the construction engineer's observation of construction.
5. A construction schedule, which includes the notice to proceed date and estimated project duration and a construction emergency action plan shall be submitted prior to the preconstruction meeting.
6. A preconstruction meeting shall be held subsequent to submitting the quality assurance plan, construction schedule and construction emergency action plan, but not later than 14 days prior to the start of construction. All parties actively involved in the construction should be requested to attend, such as the dam owner, the design engineer, the construction engineer, the contractor and the Department.
7. The Department shall be notified 5 calendar days prior to the commencement of construction.
8. Any changes from the approved plans and specifications shall be approved by the design engineer and a change order, including details and supporting calculations, must be provided to the Department. Major changes must be submitted in writing with supporting documentation and approved in writing by the Department. No work shall be initiated until the approval by the Department or Board is received. Minor changes may be transmitted verbally and approved by the Department verbally provided that documentation of the change is provided to the Department within 10 days of the approval.

9. For new dam construction and for dams and reservoirs that have lowered the water level or have been drained to facilitate construction, the construction engineer shall file and obtain approval of a filling plan with the Department. The applicant/owner shall not proceed with the filling of the reservoir until it receives permission from the Department. The construction engineer shall provide documentation of monitoring during the filling operation.
10. Prior to the filling of the reservoir, the construction engineer shall submit one copy each of the approved Operations Manual and the approved Emergency Action Plan for the facility upon completion of the project as applicable.
11. The construction engineer shall give the Department at least ten days advanced notice of initial materials placement of the dam's foundation, in the cutoff trench, outlet backfill, outlet foundation, and any appurtenance requested by the Department in the approval of the plan for construction observation, to allow for observation by the Department.
12. Notice of substantial completion shall be issued by the construction engineer to the Department stating that the permitted improvements are functionally complete such that filling of the reservoir can be initiated with an approved filling plan.
13. The construction engineer shall give the Department fifteen (15) calendar days advance written notice prior to the project's final construction inspection. The construction engineer shall coordinate with the Department to conduct this inspection in the presence of the Department's dam safety personnel.
14. The construction engineer shall provide notice at least ten (10) days prior to initiating filling the reservoir, unless agreed at the final inspection.
15. If conditions are revealed which will not permit the construction, enlargement, repair, alteration, or removal of a safe dam or reservoir, the application for approval for construction, enlargement, repair, alteration, or removal shall be revoked.
16. A topographic survey of completed work including all monuments, inverts, crest alignment, spillways, and significant appurtenant features, when required by the Department shall be completed.
17. The applicant/owner shall utilize appropriate erosion control best management practice measures during construction to minimize turbidity (such as scheduling of work during period of low stream flow) and prevent debris and construction materials, including concrete, petroleum products, and other pollutants from enter the waters of the State. Construction related water and debris should be properly disposed of in a legal and environmentally safe manner and in accordance with the Department of Health and other Federal regulations.
18. The applicant/owner shall submit a copy of the dam safety application and the plans and specifications of the proposed improvements to the County Engineer of the County for which the dam resides for compliance with County codes.
19. Within fifteen (15) calendar days of completing the project, the applicant/owner or its representative shall provide the Department with a confirmation letter of compliance, signed and stamped by the construction engineer, indicating that the construction



was completed in accordance to approved plans and specifications including any field changes. The construction engineer shall submit the remaining construction completion documents which may include, but not be limited to, as-constructed drawing, final construction report, topographic survey, record of the location of permanent monuments, log of recorded water levels and other readings from the refilling operation, long-term instrumentation monitoring plan, and affidavit showing the actual cost of construction including engineering costs, within 60 calendar days of the submittal of the final construction inspection.

20. Construction completion documents and the construction engineer's certification shall be provided to the Department within 60 days of the final construction inspection. The Department will review the submitted items and furnish acceptance or denial within 60 days of receipt of satisfactorily completed construction completion documents and close out the dam safety permit.
21. This permit does not relieve the applicant/owner of their obligations to comply with all applicable Federal, State, and County regulations.
22. In the event that historic resources; including human skeletal remains, structural remains, cultural deposits, or sand deposits are identified during construction activities, cease work in the vicinity of the find, protect the find from any disturbance, and contact the State Historic Preservation Division at (808) 243-1285.
23. Compliance with Hawaii Revised Statutes 179D, and Hawaii Administrative Rules 13-190.1.

Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

---

**ATTACHMENT C**

---

Notice of Dam Safety Deficiency, issued February 18, 2020

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

Feb 18, 2020

SUZANNE D. CASE  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA  
FIRST DEPUTY

M. KALEO MANUEL  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Faraz & Joseph Daneshgar  
West Maui Investors, LLC  
c/o 3D Instruments, LLC  
468 N. Camden Drive #100  
Beverly Hills, CA 90210

Ms. Janie Kramer  
Property Manager  
Commercial Properties of Maui Management, Inc.  
1962B Wells Street  
Wailuku, HI 96793

**Certified Mail**

Dear Messrs. Daneshgar & Ms. Kramer:

**UKUMEHAME RESERVOIRS (MA-0140), MAUI, HAWAII  
NOTICE OF DAM SAFETY DEFICIENCY**

The subject regulated dam/reservoir has been classified to be in a poor overall condition and a threat to public safety due to one or more physical / operational conditions and deficiencies identified by the Department of Land and Natural Resources (Department). This Notice of Dam Safety Deficiency supersedes the conditions stipulated in previously issued notice of deficiencies.

The subject facility is classified as a High Hazard Potential dam, as failure could jeopardize the lives of the downstream public. As a High Hazard Potential structure, the facility is required to pass the Full PMF (Probable Maximum Flood) with adequate freeboard as defined by HAR Chapter 13-190.1. The April 2009 Condition Assessment Report performed by your consultant Gannett Fleming, determined that Ukumehame Reservoirs would be overtopped by 0.1 feet during the 100 Year Storm event and "overwhelmed" by the PMF event.

Pursuant to Hawaii Revised Statutes (HRS) 179D-6, you are required to take the following remediation, and maintenance and monitoring actions, by the deadlines indicated:

1. **Remediation Schedule:**

**By 4/1/2020:**

- a. **Contract with Consultant:** Engage the services of a qualified consultant in dam-related work to complete an engineering evaluation of the deficiencies at the subject facility. Provide the consultant name, contact phone number and firm name to the Department by this date.

**By 5/30/2020:**

- b. **Install Water Level Monitoring System:** Install a real-time reservoir water level gage with the readings accessible on the internet.

**By 8/30/2020:**

- c. **Submit Technical Studies:** Submit reports to document compliance with HAR §13-190.1-4. Submit topography map, Hydrologic/Hydraulic studies, stability analysis and/or other applicable reports required to support the proposed improvements.

**By 8/30/2021:**

- d. **Submit Dam Safety Permit Application:** Submit a complete dam safety permit application package (HAR §13-190.1-20) to bring your facility into compliance with HAR §13-190.1-4

**By 8/30/2022:**

- e. **Start Construction:** Start any required Construction of the Dam Safety Permit improvements.

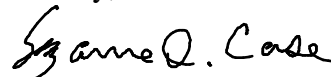
2. **Owner Maintenance and Monitoring:**

- f. Keep and maintain the reservoir empty under normal conditions.
- g. Submit monthly monitoring reports including reservoir water level, photos of the water level at the staff gage and other pertinent information to the Department's Dam Safety Program via email. Monthly reports shall be due by the first week of the next month. The initial report is due the first month following receipt of this notice.

Email reports to: [dlmr.en.fcids@hawaii.gov](mailto:dlmr.en.fcids@hawaii.gov)

Failure to comply with the Remediation and Maintenance and Monitoring actions by the indicated deadlines may result in penalties and other actions by the Board of Land and Natural Resources pursuant to HRS § 179D-6 and 8 and HAR § 13-190.1-5. Please contact Jesse Colandrea of my Engineering Division staff at (808) 587-0277 should you have any questions regarding this matter.

Sincerely,



SUZANNE CASE  
Chairperson

Board of Land and Natural Resources  
Enforcement Action on Ukumehame Reservoirs (MA-0140) for  
Failure to Comply with Notice of Deficiency, February 18, 2020

#### **ATTACHMENT D**

---

Meeting Notes for Meeting on December 21, 2020  
Between Ukumehame Reservoirs' Owners and DLNR Staff



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
POST OFFICE BOX 373  
HONOLULU, HAWAII 96809



# MEETING NOTES

## Ukumehame Reservoir Status Update Meeting

Date: Monday, December 21, 2020

Time: 10:00-11:00 am

Meeting Coordinator: Tony Koyamatsu, DLNR

Attendees: Daniel Byron, Ukumehame Water Association  
Mark Lane, Ukumehame Water Association  
Keoni Fursse, Kokua Realty  
Edwin Matsuda, DLNR  
Kristen Akamine, DLNR  
Tony Koyamatsu, DLNR

Conference Bridge: 808-451-0217, ID 612419

### Agenda

- |   |  |   |
|---|--|---|
| 1 | Status for dam relative to DLNR Notice-of-Deficiency (NOD) Letter of 2/18/20 | <ul style="list-style-type: none"><li>• Current plan for dam</li><li>• Water level gage</li><li>• Engineering studies</li><li>• Permit application timeline</li><li>• Construction timeline</li><li>• Monthly reports</li></ul> |
|---|--|---|

- |   |             |
|---|-------------|
| 2 | Other items |
|---|-------------|

### Discussion

1. Current Plans for the Dam.
  - a. The Ukumehame Water Association (UWA) took over as the formal owner for the Ukumehame Reservoir from the former owner, West Maui Investors. Pending funding availability, UWA plans to modify the Ukumehame Reservoir and reduce its capacity to bring it to a non-jurisdictional size dam. A permit was approved by the BLNR in Oct 2017 to remove the dam by lowering the effective height and volume capacity. However, UWA currently lacks the financial resources to proceed with construction, and has concerns that this is the only source of water for the downstream agriculture community. UWA acknowledged that the approved permit requires that construction be initiated within 5 years

of permit approval. UWA is seeking federal and state grants to fund their dam and well projects. DLNR will investigate and inform UWA of grant opportunities. (DLNR recommends that UWA reach out to the DLNR Commission on Water Resource Management (CWRM) – Drought Mitigation Program)

- b. UWA discussed a past CWRM ruling that reduced its ability to draw water from the Ukumehame Stream from 1.8 mgd to 45,000 gal/day, which has impacted their ability to develop a majority of their 46 lots. Accordingly, UWA has contracted consultant Tom Nance to assist with water resource plans. UWA wants to install new water supply wells as an alternate water source for its land users, but UWA also does not have sufficient funds for the wells.
  - c. The Ukumehame Reservoir lower reservoir currently remains empty and the upper reservoir is close empty at the 2-3 ft level. Ongoing seepage conditions prevents the reservoirs from retaining more than current levels, as stipulated in last DLNR Notice of Deficiency.
2. Engineering Studies. UWA has not conducted any engineering studies since Gannett Fleming was contracted to prepare the permit package approved in 2017.
  3. Water Level Gage. DLNR described a water level monitoring system used by other dam owners, which communicates real-time water level via satellite for on-line accessible data. The system is battery powered and recharged by photovoltaic panels. UWA is open to installing such a system and requested more information. DLNR will email UWA a contact at the USGS who installs and maintains such a system.
  4. Permit Application and Construction Timelines. See item 1.a. above.
  5. Response to NOD Letter. By 12/31/20, UWA will prepare a letter formally responding to the DLNR NOD letter from 2/18/20. UWA will also affirm the ownership change from West Maui Investors and provide new contact information for the dam.
  6. Monthly Reports required by the NOD were not discussed. (DLNR will email UWA to remind UWA of the requirement to submit monthly reports via email to [dlnr.en.fcds@hawaii.gov](mailto:dlnr.en.fcds@hawaii.gov)).

#### Action Items

| No. | Item   | Owner | Status             |
|-----|--|-------|--------------------|
| 1.  | Provide USGS contact information to UWA for installation of water level monitoring systems.  | DLNR  | Completed, 1/7/21. |
| 2.  | By 12/31/20, send letter to DLNR, responding to NOD letter from 2/18/20. The letter will also affirm the ownership change and provide new contact information. | UWA   |                    |
| 3.  | Submit future monthly reports via email to <a href="mailto:dlnr.en.fcds@hawaii.gov">dlnr.en.fcds@hawaii.gov</a> .  | UWA   |                    |

---

**ATTACHMENT E**

---

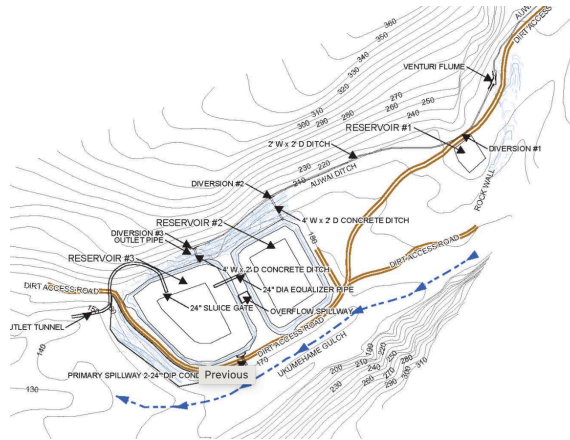
Ukumehame Summary Sheet and Scorecard



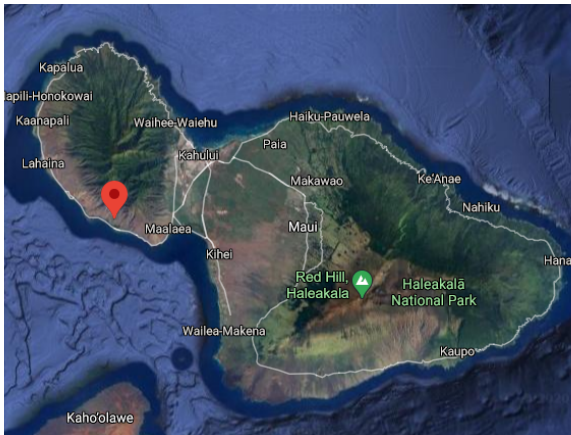
# Ukumehame Reservoirs MA-0140



W 156.58729\* Ukumehame (212).JPG 1:08:13 PM



Grouted Rip Rap Upstream Slope in Reservoir #3



- Recommended fine: \$10,000
- Dam status: Empty flow pool; seepage issues; undersized spillway
- Owner's current plans: Reduce capacity to non-jurisdictional size
  - Permit approved by BLNR in Nov 2017 (exp. 2022) to remove the dam
  - Seeking funding to start construction
- No level gage and no monthly monitoring reports
- Owner was informed of dam deficiencies in reports and notices dating back to 2008, but no long-term safety improvements have been completed





## Ukumehame (MA-0140) Scorecard & Penalty Breakdown

### SCORECARD

| Owner                           | Dam ID  | Dam Name  | Dam Status                  | Owner's Plan                               | Level Gage    | Monthly Reports   | Consultant Retained | Studies     | Permit Application                         | Construction Start | Action Recommended |
|---------------------------------|---------|-----------|-----------------------------|--|---------------|-------------------|---------------------|-------------|--|--------------------|--------------------|
| Typical cost of remediation --> |         |           |                             |  | \$12-15K      | No Cost           | \$50-100K           | \$50-200K   | \$10-30K                                   | > \$500K           |                    |
| Ukumehame Water Assoc.          | MA-0140 | Ukumehame | Empty, flow pool            | Reduce cap to non-juris, but pends funding | 5/30/20       | No                | Done                | Done        | Done                                       | 8/30/22            | \$10,000 fine      |
|                                 |         |           |                             |  | TBD           |                   |                     |             |  | TBD                |                    |
|                                 |         |           | Recommended fine amount --> |  | \$5,000       | \$5,000           |                     |             |  |                    |                    |
|                                 |         |           |                             |  |               |                   |                     |             |  |                    |                    |
|                                 |         |           |                             |  | GREEN rating: | Done or completed |                     | RED rating: | "No," or missed deadline and no plan (TBD) |                    |                    |

